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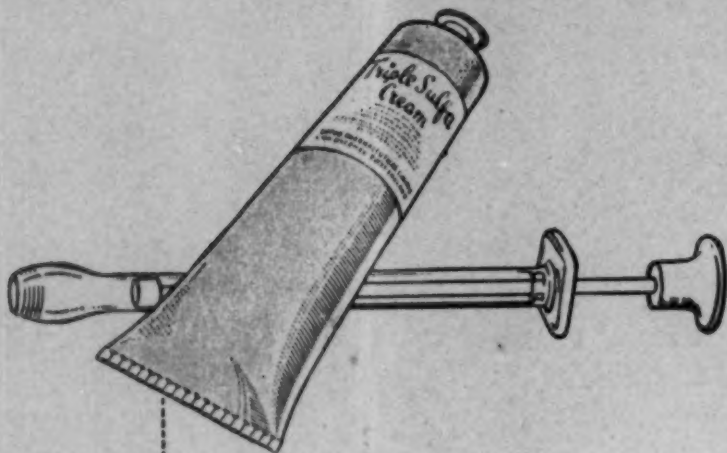
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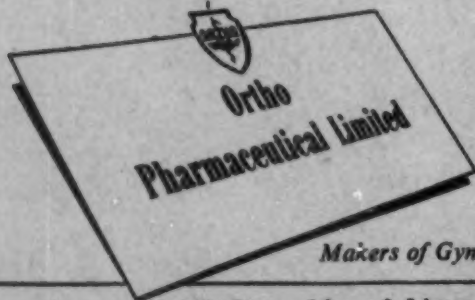
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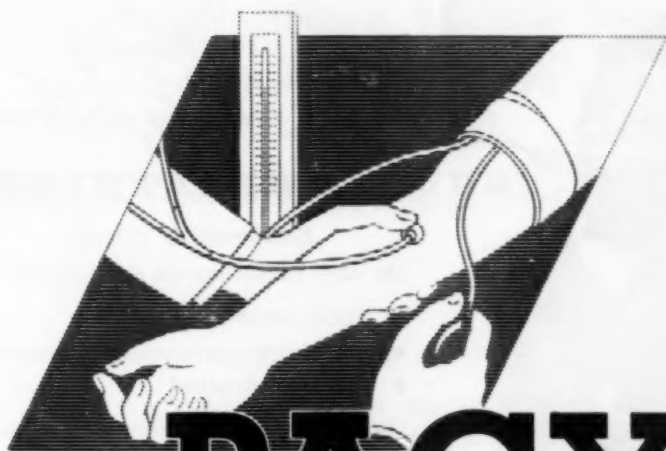
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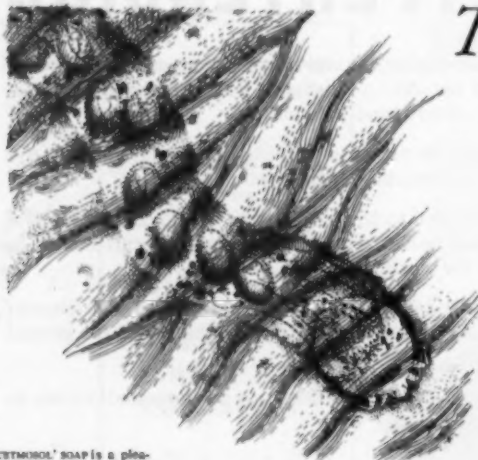
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MALNUTRITION IN THE NATIVE IN THE TRANSKEI

J. H. JACKSON, M.B., B.S. (DURHAM)

Tabankulu, East Pondoland

This paper aims to draw attention to the conditions which have been the source of its material and to suggest ways of treating cases of malnutrition in the Native. I trust that it will assist those of my colleagues who treat the poorer sections of the South African populace.

The figures in Table I are compiled from an unselected group of Native patients, who complained of sickness, seen in my surgery during January 1952. The cases classified under ariboflavinosis and pellagra were cases where the conditions could be diagnosed without any difficulty, i.e. where either one or the other, or both conditions could be said to be present without doubt. There is, at times, difficulty in differentiating the manifestations of ariboflavinosis and pellagra from each other and for

The figures in Table III are compiled from the incidence of ariboflavinosis and pellagra in an unselected group of boys examined by me as labourers in January 1952. The estimated age of the group varied between 18-50 years; the majority would be under 30 years. The group was selected relative to the general male population in the sense that the patently sick and malnourished subject was likely to have been excluded before the boys reached me. The figures, therefore, represent the incidence of the 2 conditions in a group of comparatively healthy men from the area.

TABLE I

	Males	Females	Combined
Total cases of sickness examined ..	39	51	90
Pellagra and Ariboflavinosis ..	Cases .. 5	8	13
	Percentage of sickness 12.8%	15.6%	14.4%
Percentage of total cases of Pellagra and Ariboflavinosis ..	38.4%	61.6%	100%

Cases considered primarily Ariboflavinosis: 8
Cases considered primarily Pellagra: 5

this reason the 2 conditions have been grouped together. However, the number considered to be primarily of ariboflavinosis or pellagra are given below the Table.

The figures in Table II are compiled from cases which occurred in an outbreak of disease in a location, which I was called upon to investigate in January 1952. Classification of cases is the same as in Table I.

TABLE II: EPIDEMIC CASES

	Cases	Percentage
Male	5	26.3
Female	14	73.7
Total	19	100

Cases considered primarily Ariboflavinosis: 14
Cases considered primarily Pellagra: 5

TABLE III

Total boys examined, age 18-50 years ..	520
Cases considered primarily Ariboflavinosis .. 4	Total 5
Cases considered primarily Pellagra .. 1	
Cases: Total percentage ..	0.95

Analysis of the figures in the Tables reveals that:

- The incidence of developed deficiency disease is high.
- Ariboflavinosis predominates as a deficiency state.
- The incidence of malnutrition falls more heavily on the female than the male.

With reference to the high incidence of developed deficiency disease it should be noted that the figures do not

include any cases other than those cases where a clear diagnosis could be made. There were many other cases in which a diagnosis of general malnutrition could be made clearly without putting the label of a true deficiency disease upon the case. Analysis of the Native diet leads one to the conclusion that general malnutrition must be wide-spread in the area.

Maize forms the bulk of the Native diet. Milk, fresh or sour, is taken twice daily when it is available. In the dry season milk is short and in times of drought it is scarce. Sour porridge made from kaffir corn and yeast is common food. Meat is usually eaten at special occasions only, not as a regular constituent of the diet. To get meat once per week is considered very 'high' living. The average family gets meat about once every 3-6 months. Kaffir beer is a regular drink for the adults. Beans are used as a food but not as much as are mealies (they are not grown as the main article of diet). Not many Natives grow green vegetables. Wild greens are used by the primitive Native, boiled and mixed with mealies. Pumpkins are eaten cooked, in season. The average Native does not grow ground crops, i.e. potatoes, turnips, carrots, onions, etc. Very few grow fruit. Eggs are not eaten regularly and primitive Natives do not eat them.

Certain superstitions and customs exist in connexion with food and must contribute to malnutrition. Amongst primitive Natives it is not unusual for milk to be forbidden to the recently married woman. In some cases permission to take milk may be withheld for a long time. This custom is not followed amongst Christian and educated Natives. Eggs are forbidden to women because it is believed that they render them wanton. This belief would appear to be fairly general even among the more enlightened Natives. Men do not eat eggs regularly. Fish is not regarded by inland races as good food, the fish being regarded as a snake or reptile, few eating it.

The diet of the average Native in the territories varies with his agricultural prosperity and fluctuates according to the abundance of his yearly crop. He plants one crop a year, chiefly maize, and if that fails his condition is parlous. His wife or wives and family suffer, for he usually goes as a labourer to the mines or elsewhere where he is well fed, while his family subsist on imported mealies bought with his earnings. During the dry season of the year the dietary of the Native in the territories falls to a poor level and in times of drought and poor crops imported mealies are the sole source of food in many cases. My experience suggests that the greatest yearly incidence of developed deficiency disease corresponds to the period when the Native diet reaches its lowest yearly level, i.e. when the previous year's crop is almost exhausted or is actually used up, and the new one is awaited. This corresponds to the months December, January and February.

The higher incidence of ariboflavinosis confirms the view that general malnutrition is widespread. In the Handbook, *Nutrition and Relief Work*, this statement is made: 'The symptoms of riboflavin deficiency often accompany or precede those of nicotinic acid deficiency in pellagra, but may also occur dissociated from that disease, or when the diet is deficient in many factors they may be the first to be noted, thereby being of particular importance.'¹ (Italics inserted).

It is not surprising that the incidence of developed deficiency disease should fall more heavily on the female than on the male in the Native territories. The reasons are:

i. The men are recruited as labourers for the mines and other industries and leave the district for 6 to 9 months per year, during which period they are better fed.

ii. Taking all factors into consideration, they are likely to be better fed than the female even while in the locations. It is felt however that it is the diet while they are away from the locations which lowers the incidence of developed deficiency disease in the male so significantly. While this is considered to be so, I do not think it can be used as an argument in favour of migratory labour.

The significance of the higher incidence of developed malnutrition in the female cannot be missed by any thinking medical man. Korenchevsky (1922), quoted by Gillman and Gillman, drew attention to the development of rickets in an infant born to a malnourished mother even though it was nurtured at the breast of a healthy woman whose own baby did not develop rickets.² The conditioning effect of a deficient diet may affect both the first and the second generation. The same diet inflicted on the second generation after birth may have serious effects by the third generation.

Gillman and Gillman in their book *Perspectives in Human Malnutrition* say: 'The present trends in the incidence of pellagra seem to indicate that despite the lessons of Italy, France, Mexico and the United States, South Africa, in turn, is to confront a stupendous human problem of chronic disease and malnutrition for the next two generations.'³ 'The low mortality from uncomplicated pellagra in Johannesburg is noteworthy. The same experience was reported from America towards the end of the last century. This may be the beginnings of a virulent malnutrition which having first undermined the vitality of the first generation is now beginning to gather momentum in the second. The conditions in South Africa are gradually becoming propitious for virulent forms of pellagra.'⁴ They state that in the epidemics in the countries mentioned mortality can be as high as 60% amongst those afflicted.

I feel that, in view of the figures presented, for South Africa the writing is already on the wall. Moreover the lack of vital statistics for the Native community may be covering a state of affairs which is little appreciated for lack of facts to prove it.

In order to clarify the situation as regards my figures it will be essential for me to list the more pronounced signs upon which I based the differentiation of the cases.

Ariboflavinosis is characterized by: cheilosis, angular stomatitis, glossitis (often starting at the tip and sides of the tongue, the tongue usually having a magenta tint), sebaceous plugging (sulphur granules) on the nose, cheeks, lips, and forehead. The cheilosis is often very severe, giving rise to severe ulceration, which may be advanced in the absence of any other signs, though usually sulphur granules accompany it on the nose. When the lesion heals it leaves the lower lip devoid of its melanoic pigment. This healed lesion with depigmentation can be taken as certain evidence of past ariboflavinosis.

Pellagra is characterized by: dermatitis (from which it gets its name), glossitis, stomatitis, pharyngitis, oesophagitis, intractable diarrhoea in advanced cases, and mental

upset. The dermatitis has a typical distribution, varies in intensity from redness and pigmentation to severe ulceration. The mouth signs differ from those of ariboflavinosis in that the whole mouth is often involved in the acute cases, the mouth being more red and sore than is the case in ariboflavinosis, and there is often secondary infection. In more chronic cases, however, the tongue shows a general glossitis of a pink colour. The mental cases usually have the other stigmata of pellagra in addition to the mental disorder, which frequently takes the form of confusion and disorientation. There may be hallucinations, suicidal or homicidal tendencies.

Cases present with manifestations attributable to both syndromes. Other cases present with a minimum of manifestations. Thus in ariboflavinosis sometimes all that can be found are sulphur granules on the face and a little scaling of the lips which have been denuded of their black pigmentation. In pellagra all that may be found is a slight pigmentation and desquamation of the arms and hands, or legs and feet, or the neck, not all the sites being affected.

Many Natives show mild signs, when one would be loath to diagnose a true ariboflavinosis or pellagra, but from their appearance they are borderline cases and must be classed as 'general malnutrition'. In this connexion one of my colleagues told me a story of how a well-known authority on the Native did a ward round in his teaching hospital and pointed out signs of malnutrition which they (I presume students) considered of no importance. I cannot vouch for the story but I can vouch for his statement about signs of no importance. I sincerely hope that he is not of that opinion now, and if so I trust that this paper will persuade him to regard such signs with greater respect.

It can be assumed that the diet of the Native in the territories is mainly maize, especially in times of stress. The following vital constituents are deficient in such a diet: protein, fat, calcium, iron, vitamin B complex, ascorbic acid.

The protein supplied by maize is of poor quality, being deficient in 2 essential amino acids, lysine and tryptophane; maize itself is not sufficient as a source of protein. This is especially so if the husk and germ are removed, a practice to which the Native is addicted when using mealies as a source of food.⁵

A fat deficiency is likely in this sense that there may be a deficiency of fatty acids, or other fatty substances, which are normally derived from an outside source. There is evidence that certain unsaturated fatty acids are necessary for normal metabolism and growth and of these some are present in the lipids.⁶ Certainly any fats present in the body must be mainly derived from internal synthesis, and if any fatty acids exist which are essential for normal health, their amount within the body will be minimal. Moreover, in view of the known fact of a multiple deficiency in the diet of those substances intimately connected with the co-enzyme systems of the body generally, the synthesis of fats may be faulty and incomplete. There is ground, therefore, for advocating the administration of animal fat in the treatment of the deficiency states under discussion.

Obvious signs of calcium deficiency may not be present clinically, but there is abundant evidence of osteoporosis in pellagrins.⁷ That some of this osteoporosis is related

to a deficient intake or absorption of calcium in addition to other vital substances is highly probable. Maize has a rachitogenic action second only to oatmeal, and a calcium : phosphorus ratio of 1 : 10. The addition of calcium to a maize diet would appear to be warranted. In the treatment of the deficiency states arising from a maize diet, provided the other deficiencies are corrected, the exhibition of calcium should assist in the recovery of the patient. The antirachitic action of sunlight must be regarded as one of the blessings of South Africa, for it would appear to provide enough vitamin D to prevent the gross manifestations of rickets and osteomalacia which would inevitably appear in a less fortunate climate in persons existing on the diet outlined.

It is unlikely that a true iron deficiency exists in the deficiency states of the Native. If it exists it is incidental. Anaemia, when present, is likely to be the result of poor or incorrect utilization of iron due to other vital deficiencies rather than to one of iron itself.⁸ Moreover, in the presence of malnutrition it is unlikely that an iron deficiency anaemia will improve without correction of the other co-existing vital deficiencies.

The outstanding lack in the diet outlined above is that of the vitamin B complex. It is likely that there is a general deficiency of all the components of this complex, but those conditions normally attributed to lack of riboflavin or nicotinic acid predominate. There is evidence to support the view that the syndromes known as ariboflavinosis and pellagra are the superficial manifestations of an underlying, total, 'poised', multiple deficiency state, riboflavin and nicotinic acid being the materials which reverse their respective phenomena, producing once more a poised, unstable state of nutritional imbalance which has an apparent appearance of normality. The slightest additional stress applied to such a poised state of nutritional imbalance may produce the syndrome which has been labelled a specific deficiency state, e.g. pellagra. This concept allows one to explain the odd case where apparently vitamins alone are unable to prevent the onset of pellagra and, in the case of malignant malnutrition in children, often exacerbate the condition. The vitamins of the B complex are intimately connected with the co-enzyme systems and the metabolism of the body generally. Thiamine or aneurine hydrochloride (vitamin B₁) is concerned with the metabolism of carbohydrates and a diet rich in these imposes an increased demand for it. Riboflavin (vitamin B₂) with which the metabolism of pantothenic acid appears to be linked, plays an important part in the co-enzyme systems of the body generally. Nicotinic acid acts in the co-enzyme systems connected with the metabolism of protein and fat. Pyridoxine (vitamin B₆) is involved in the metabolism of tryptophane and the use of essential unsaturated fatty acids. It follows that a diet deficient in the components of the vitamin B complex must produce a gross disturbance throughout the general metabolism.

Vitamin B₁₂, essential to normal blood formation, is now considered to have other functions connected with lipid and fat metabolism and its specific effect in pernicious anaemia and subacute combined degeneration of the cord may be due to this. A fatty liver is a common finding in pellagra and the fact that vitamin B₁₂ has an effect on the fatty liver in alcoholic polyneuritis is not

without significance when considering the treatment of deficiency states in the Native.⁹

Ascorbic acid lack does not present with the frequency which one would expect from the nature of the diet. From the evidence it must be assumed that a deficiency exists but that the Native in some way avoids the more severe manifestations of it, possibly by the intake of natural greens or fruits. There is a sign which I have found frequently in the Native, which (for want of a better name) I call 'red marginal gingivitis'. It consists of a thin, narrow line at the junction of the gum with the tooth, reddish pink in colour, clearly different from the normal pink of the rest of the gum. It looks like granulations, but often no history of bleeding from the gum is obtained. It is common in pregnant women and nursing mothers. It is nutritional in origin and disappears on multivitamin therapy. Owing to the prevalent nutritional deficiencies I thought it represented alpine scurvy, and regarded it as due to lack of riboflavin. It may be due to a lack of vitamin C. Alpine scurvy was described as occurring in pellagra.¹⁰

Yellow maize is a fairly rich source of vitamin A and it is likely that the Native receives an adequate supply, if not an abundance thereof, particularly if his diet is supplemented with green vegetables of any type.

Finally what is one to do?

In the surgery: (1) Supply the patient with vitamins by mouth and by injection, along with a fish liver oil and other preparations which his condition may indicate—treatment which such patients can ill afford. (2) Instruct the patient in the correct diet, which he is unlikely to be able to afford or maintain for any length of time. (3) Treat the patient for worms, which frequently accompany malnutrition and should be eliminated as a possible contributory cause. It is advisable to get the patient into a reasonable condition before doing this. By such measures it will be possible to prolong his life and give him relief which may or may not be long-lasting, according to whether he will be able to maintain a corrected diet.

It will be found on occasion that the exhibition of vitamins is insufficient to prevent the onset of symptoms when the patient is subsisting on a diet of maize only. The explanation for this has already been given. Nevertheless, by the careful noting of the signs of malnutrition and the exhibition of multivitamin preparations, the physician dealing with the poorer section of the South African populace will learn to recognize conditions which are primarily due to malnutrition and only secondarily related to the causes which would operate in a better-nourished community. The exhibition of ordinary drugs in such cases will produce no lasting benefit, and it were better to discard them than to administer them in the absence of the knowledge of the prime cause of the patient's condition. The condition of malnutritional keratoconjunctivitis described by Blumenthal is the best example in this connexion. This condition exists, or at least a similar condition, is present in the Transkei.¹¹ The physician conscious of the grave effects of malnutrition, and prepared to treat them, will on occasion get remarkable results.

The total problem of malnutrition is beyond solution in the surgery, and has now reached a State problem of such a magnitude that its solution will require from the peoples of South Africa a completely non-political effort. There

is no answer to it except by methods which will raise the economic and educational standards of the Native peoples. The malnutrition exhibited is but a link in a vicious circle.

It is suggested that fortified maize meal would be a solution to the problem. This can be but a temporary measure to stave off the more severe effects of the present situation. Any fortification of maize meal would require the addition of most of the deficient substances already discussed, in order for it to be satisfactory supplement to the Native diet, and I doubt if this would be practicable. Moreover, unless supplied at a very cheap rate, such a product will not be eaten in the territories by the average Native, who will eat his home-produced mealies; thus the nutritional imbalance will persist. This paper presents but a small part of the whole problem of Native malnutrition. There is no answer except by ensuring an adequate mixed diet, and making the Native aware of its benefits.

SUMMARY

1. Figures are presented indicating the incidence of developed malnutritional states in the Natives in an area of the Transkei.

2. The Native diet is discussed in relation to its inherent deficiencies with a view to indicating methods of treatment for the conditions reviewed.

3. Attention is drawn to the fact that the syndromes of pellagra and ariboflavinosis may be the superficial manifestations of a multiple malnutritional state. Ariboflavinosis is emphasized in this respect.

4. The medical gravity of malnutrition is stressed.

5. Long-term, stable planning at high levels to eliminate the economic and educational factors which produce and perpetuate malnutrition in the Native is considered to be the answer to the total problem.

6. It is maintained that there is no substitute for a balanced mixed diet.

I am indebted to the book *Perspectives in Human Malnutrition* by Gillman and Gillman. Many of the views expressed here are taken therefrom. My defence is that they conform with my experience. I recommend the book to all medical men who have to deal with malnourished populations.

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South African Medical Journal

Suid-Afrikaanse Tydskrif vir Geneeskunde

EDITORIAL

THE SHORTAGE OF NURSES: FIRST THINGS FIRST IN A NATIONAL EMERGENCY

Elsewhere in this issue of the *Journal* we publish a thoughtful though trenchant analysis (by Dr. J. D. Joubert of Umtata) of the reasons for the serious shortage of nurses in South Africa. Dr. Joubert puts forward practical suggestions capable of remedying (or at all events ameliorating) the situation in a reasonably short time. Our contributor writes with much experience of country requirements. His analysis, however, reveals a situation typical of the problem which besets us all over the Union but which has not yet been felt equally acutely in the urban areas.

The deterioration in the situation is progressive and, unless positive action which can yield results is taken, we will undoubtedly find ourselves in the serious dilemma predicted by Dr. Joubert.

It is almost superfluous to say that the medical profession will lend every effort within its powers to improve matters. It is the public authorities, however, who must take the first steps because it is obvious that very necessary and very adequate inducements must to-day be offered to the type of young persons we wish to recruit for this calling, if they are to be persuaded to adopt nursing as a profession and a career. Unless these efforts are made, all schemes to cope with the situation in the nursing profession are foredoomed to failure.

The nursing shortage has serious repercussions which extend far beyond the immediate care of those already sick in existing hospital beds. It is common knowledge that we have not been able to make full use of available beds for the sick because the hospitals containing these beds cannot be staffed adequately. Indeed, in some parts of the country, newly-built hospitals have not been able to function at all or else hospitals have not been able to function to their full capacity because of the nursing shortage. There are hospital buildings which could relieve the enormous pressure, but which stand as empty shells because of the lack of staff.

It is clear, therefore, that however anxious we may be to make more beds available for the sick, any scheme to extend free hospitalization services in the present circumstances is to pursue blindly a most unrealistic policy. No scheme to provide increasing hospital services dare be entertained on the scale contemplated in the Union to-day, unless the fundamental requirements of beds and nurses have been secured in advance—and the provision of nursing services, in this matter, takes on a priority even higher than that of the provision of beds.

When this sound foundation has been laid, only then will it be proper to start preparing blue-prints for the

VAN DIE REDAKSIE

DIE TEKORT AAN VERPLEEGSTERS: BELANGRIKSTE SAKE EERSTE IN 'N NASIONALE NOODTOESTAND

Elders in hierdie uitgawe van die *Tydskrif* publiseer ons 'n deurdagte dog beslisse ontleding (deur dr. J. D. Joubert van Umtata) van die oorsake van die ernstige tekort aan verpleegsters in Suid-Afrika. Dr. Joubert doen praktiese wenke aan die hand wat moontlik die posisie binne 'n redelike tydperk kan verhelp (of in alle geval verlig). Ons medewerker skryf met rype ondervinding van die plattelandse behoeftes. Sy ontleding belig egter 'n toestand wat tipies is van die probleem wat ons dwarsdeur die Unie in die gesig staar, maar wat nog nie tot dieselfde mate in die stadsgebiede gevoel word nie.

Die toestand word al erger, en tensy daadwerklike stappe gedoen word wat vrugte kan afwerp, sal ons ons seer sekerlik in die verleentheid bevind wat dr. Joubert voorspel.

Dit is byna oorbodig om te sê dat die mediese beroep alles in sy vermoë sal doen om sake te verbeter. Dit is egter die betrokke owerhede wat die eerste stappe moet doen, want dis duidelik dat die lokmiddels wat ons aanbied baie nodig en baie toereikend sal moet wees as ons die tipe jongmens wat ons graag vir hierdie roeping wil werf, wil oorhaal om verpleging as 'n professie en 'n loopbaan te aanvaar. Tensy hierdie pogings aangewend word, sal alle skemas om die posisie in die verpleegstersprofessie die hoof te bied in die kiem gesmoor wees.

Die tekort aan verpleegsters het ernstige gevolge wat baie verder reik as die onmiddellike versorging van diegene wat alreeds siek is in bestaande hospitale. Dis algemeen bekend dat ons nie in staat was om alle beskikbare beddens te gebruik nie want die hospitale wat hierdie beddens bevat, beskik nie oor voldoende personeel nie. Inderdaad, nuwe hospitale in sommige dele van die land was nog nooit in gebruik nie, of anders was hospitale slegs gedeeltelik gebruik, weens die tekort aan verpleegsters. Daar is hospitaalgeboue wat die ontsaglike druk kan verlig, maar wat leegstaan weens gebrek aan personeel.

Dit is derhalwe duidelik dat, hoe angstig ons ook is om meer beddens vir siekes beskikbaar te stel, enige skema om vry hospitalisasie dienste onder die huidige omstandighede uit te brei, die blindelinge navolging van 'n mees onrealistiese beleid is. Geen skema om meer hospitaaldienste te voorsien op die skaal wat vandag in die Unie in die vooruitsig gestel word, mag oorweeg word nie, tensy die grondvereistes van beddens en verpleegsters nie vooruit verseker word nie—en in hierdie saak geniet die voorsiening van verpleegdienste voorkeur bo die voorsiening van beddens.

Eers wanneer hierdie hegte fondament gelê is, sal dit geoorloof wees om programme voor te berei vir die vry

much-publicized free hospital schemes. All public authorities sincerely in earnest about such services, must first bend all their efforts in the direction of establishing an adequate nursing staff for existing hospital beds, with due provision for the normal expansion of requirements in the foreseeable future. Any other programme may justifiably be looked upon as suspect. It is, therefore, in the wider public interest that the conditions of training and service of the nurses should be brought under review, possibly in the manner suggested by Dr. Joubert.

For these reasons, *inter alia*, we hope that Dr. Joubert's appeal to tackle the nursing staff problem in South Africa realistically (even if it is only to provide an interim solution), will not fall on deaf ears.

FORMATION OF AN INTERNATIONAL FERTILITY ASSOCIATION

On 18 October 1951, in Rio de Janeiro, Brazil, delegates from 12 nations founded a new world medical society known as the *International Fertility Association*. The aims of this organization are:

1. To study the problems of Fertility and Sterility in their broad implications.
2. To stimulate scientific investigation and social awareness in the field of Fertility and Sterility.
3. To standardize and orient nomenclature, terminology, tests and evaluation of diagnostic methods and therapy, throughout the world.
4. To hold international congresses in the specialty in different parts of the world. These congresses are to be scheduled regularly.

The *First World Congress on Fertility and Sterility* sponsored by the new society will be held in conjunction with the American Society for the Study of Sterility in New York City in May 1953.

Readers who wish to obtain further information should write to Dr. Carlos D. Guerrero, Secretary-General, Miguel E. Schulz No. 19, Mexico, D. F., or to Dr. Abner I. Weisman, Associate Secretary-General, 1160 Fifth Avenue, New York, N.Y., U.S.A.

hospitaalskemas wat so baie publisiteit geniet. Alle openbare overhede wat sulke dienste op die hart dra, moet eers al hulle pogings toespits op die daarstel van voldoende verplegingspersoneel vir bestaande hospitale, met paslike voorsiening vir normale uitbreiding in die afsienbare toekoms. Enige ander program sou met reg met agterdog bejeën word. Dit is derhalwe in die breëre sin in die openbare belang dat die voorwaardes van opleiding en diens van die verpleegsters in hersiening geneem word, moontlik op die wyse wat dr. Joubert aan die hand doen.

Om hierdie redes, onder andere, hoop ons dat dr. Joubert se oproep om die verplegingsprobleem in Suid-Afrika realisties aan te pak (al bied dit slegs 'n tydelike oplossing), nie op dowe ore sal val nie.

STIGTING VAN 'N INTERNASIONALE VRUGBAARHEIDSVENIGING

Op 18 Oktober 1951 het afgevaardigdes van 12 nasies in Rio de Janeiro, Brasilië, 'n nuwe internasionale mediese vereniging gestig wat bekend staan as die *International Fertility Association*. Die oogmerke van die organisasie is:

1. Om die probleme van vrugbaarheid en onvrugbaarheid in hulle breër implikasies te bestudeer.
2. Om wetenskaplike ondersoek en sosiale bewustheid op die gebied van vrugbaarheid en onvrugbaarheid aan te wakker.
3. Om benaming, terminologie, toetse en berekening van diagnostiese metodes en terapie dwarsoor die wêreld te standaardiseer en te oriënteer.
4. Om internasionale kongresse oor hierdie onderwerp in verskeie dele van die wêreld te hou. Hierdie kongresse sal gereeld belê word.

Die eerste Wêreldkongres oor Vrugbaarheid en Onvrugbaarheid wat onder beskerming van die nuwe Vereniging staan, sal in samewerking met die Amerikaanse Vereniging vir die Bestudering van Onvrugbaarheid in New York in Mei 1953 gehou word.

Lesers wat verdere inligting verlang moet skryf aan dr. Carlos D. Guerrero, Secretary-General, Miguel E. Schulz No. 19, Mexico, D.F., of aan dr. Abner I. Weisman, Associate Secretary-General, 1160 Fifth Avenue, New York, N.Y., U.S.A.

TRACHEOTOMY

A SURVEY OF 111 CASES AT WATERVAL HOSPITAL 1945-1951

E. CHIGIER, M.B., B.Ch.

Waterval Hospital, City Health Department, Johannesburg

During the years 1945-1951, 111 tracheotomies were carried out at Waterval Hospital. All the patients concerned were non-Europeans varying in age from 4 months to 30 years. The operations were carried out by a number of people over the years. An attempt will be made to analyse these cases, and draw certain conclusions, which may be useful to the general practitioner suddenly confronted with the problem, or to the student and worker in infectious diseases hospitals.

Incidence. Of 3,316 cases admitted to the diphtheria wards in the last 7 years, about 111 cases required tracheotomy. Table I is an analysis of these cases with respect to etiology, sex and age factors.

Sex. In this series there were 67 males to 44 females, a slightly greater proportion of males.

Age. Only 10 patients in the series were over the age of 5 years, while 49 were under the age of 2 years; 65% of all cases were under the age of 3 years. This conforms

TABLE I

Etiology	Sex		Age		
	M.	F.	Under 2 years	2-5 years	Over 5 years
1. Laryngeal diphtheria ..	85	48	37	38	42
2. Acute non-specific laryngitis ..	14	13	1	5	6
3. Measles ..	2	—	2	1	1
4. Tuberculous laryngitis ..	5	2	3	2	1
5. Acute tonsillitis and adenitis ..	1	1	—	1	—
6. Diphtheria and measles ..	3	2	1	1	2
7. Doubtful etiology ..	1	1	—	1	—
Total ..	111	67	44	49	52

to the incidence of the causative diseases, and agrees with the age incidence, as mentioned by Bayer¹⁰ and Napier.²

Etiology and Diagnosis: (1) *Laryngeal Diphtheria (Primary and Secondary).* The greater majority of cases requiring tracheotomy in this series were patients diagnosed as suffering from laryngeal diphtherias, totalling 84 cases out of 111. Age and sex factors were of minor importance. The diagnosis was made on the basis of the following criteria:

- (a) Presence of membrane in throat; or
- (b) Presence of membrane in trachea at the operation and with post-operative suction; or
- (c) Report of a positive swab for diphtheria from the nose, throat or tracheotomy tube.

The last criterion, although obviously the best confirmation of a positive diagnosis, is not found in many instances. In 57 cases, where swabs were taken, only 19 were positive, giving a 33% positive result. Bayer¹⁰ at the Fever Hospital, Johannesburg, found positive swabs in 60% of cases of laryngeal diphtheria. The report of a swab positive for diphtheria is therefore only confirmatory to a diagnosis, and the clinical picture must be relied upon to indicate the diagnosis, and the treatment required.

(2) *Acute Non-Specific Laryngitis.* This condition was diagnosed in 14 cases, of which 13 were males. The diagnosis was made on the basis of acute onset of dyspnoea, 'croupy' cough, stridor, signs of laryngeal obstruction, markedly raised temperature, and the absence of membrane in the throat, confirmed by a negative swab for diphtheria. This condition, often called acute or 'fulminating' laryngo-tracheo-bronchitis has become more and more recognized as a clinical entity. Whereas writers like Napier² have considered all cases as laryngeal diphtheria, despite the absence of a membrane in the throat, and a negative swab for diphtheria, the condition has been recognized and fully described by Richards,⁵ Gittins,⁶ Cummings,¹¹ and especially by Neffson,⁴ who describes the results with 127 tracheotomies in non-diphtheritic acute infections of the throat. The cause of the laryngeal obstruction is due to oedema and exudate, and is commonest in the young age group (1-2 years), with a resultant high mortality. In this series, 14 cases were regarded as having this diagnosis, of which 5 were under the age of 2 years and 6 in the age group 2-5 years.

(3) *Measles.* The 2 cases under this heading could really be classified as a sub-section of (2), for the same pathogenesis, i.e. a catarrhal laryngitis, is the cause of the

laryngeal obstruction. However, since the laryngitis was associated with a definite disease, i.e. measles, and was regarded as being due solely to the inflammatory changes in the upper respiratory tract brought about by measles, they have been listed separately. One case was a 4-year-old female child who developed laryngeal obstruction on the 4th day after the rash had developed. The other was a female aged 1 year with broncho-pneumonia, and a fading measles rash, who required a tracheotomy to relieve the subsequent laryngeal obstruction.

(4) *Tuberculous Laryngitis.* In this series there were 5 cases. All were treated with Streptomycin, and one patient died. Two patients, a 3-year-old female and a one-year-old male also had tuberculous glands in the neck but no pulmonary pathology. An 8-year-old male was X-rayed 6 weeks before the onset of the laryngitis, to reveal bilateral pulmonary tuberculosis, and is still in hospital, being treated for his pulmonary pathology. A female (6 years) was admitted with a history of cough for 5 months, and pus present in the posterior pharynx. Ten days later a tracheotomy was necessary for acute laryngeal obstruction, but patient died following day. Autopsy revealed miliary tuberculosis and tuberculous laryngitis. The last case was a female (1 year) presenting with laryngitis, and obstruction requiring a tracheotomy. X-ray showed a miliary tuberculosis.

(5) *Acute Tonsillitis and Adenitis.* This was an interesting case of a male child aged 1 year, sent in as a ? mumps, and on examination had an acute tonsillitis with sub-mandibular adenitis. This was treated with Penicillin and sulphonamide therapy, but 2 days later an acute laryngeal obstruction developed, and a tracheotomy had to be performed. No membrane was found, and swabs for diphtheria were negative. Three days later the patient had again to be taken to theatre, and a peritonsillar abscess was opened. The patient was discharged after 6 weeks in hospital.

(6) *Diphtheria and Measles.* This is a recognized association and Johnstone¹⁰ presented 4 successful cases which required tracheotomy. In this series there were 3 cases, one having a rash on admission, while the other 2 cases developed the rash on the third day. None had membrane in the throat, but membrane was found in the trachea.

(7) *Doubtful Etiology.* One patient, a male child, aged 1 year, was admitted with signs of laryngeal obstruction requiring a tracheotomy. No membrane was present and swabs were negative for diphtheria. The tube was removed on the fifth day, but patient became distressed and the tube had to be re-inserted. The tube was eventually removed 3 weeks after the operation, but child became distressed and was transferred to E.N.T. Department of the Johannesburg non-European Hospital. Unfortunately, the subsequent history of the patient could not be followed up as his card could not be traced.

INDICATIONS FOR TRACHEOTOMY

One of the most difficult problems in the practice of medicine is to decide whether to do a tracheotomy. The picture of the patient, usually a child, tossing restlessly in bed, acutely dyspnoeic, fighting for breath, is a frightening one, even to the most experienced of paediatricians. Where the child is obviously on its last legs there will be no doubt about the advisability of the operation. Where there is only slight dyspnoea, and a fairly restful child, the

operation can be deferred for the moment without any qualms. But in many cases the decision is a most difficult one. Even in the best of hands, tracheotomy carries a high mortality and an anxious prognosis. On the other hand, especially in hospital practice, though one can afford to wait and keep the patient under observation, there is no certain way of telling beforehand whether the child will improve or whether it will go on to a complete state of exhaustion, leaving a moribund child as a subject for tracheotomy, with the prognosis almost hopeless.

In this hospital no cases were treated by intubation as done by Neffson,⁶ Howard,¹⁰ and others, and the choice was, therefore, between doing a tracheotomy or carrying out no operative relief whatsoever. Though some hospitals prefer to wait as long as possible, Napier² and many others favour early tracheotomy. Bayer¹⁰ stresses the importance of waiting as long as possible in very young children where the mortality rate is frightening. Every patient is a law unto himself, and in every case the decision must depend on the individual clinical picture. It is therefore obvious that no hard and fast rule can be laid down whether to do the operation or not. Certain signs and features, however, are useful pointers, and may be helpful in coming to a decision.

1. *Recession.* The presence of retraction supra-clavicularly, and at the epigastrium, is a frightening indication of dyspnoea, especially in a child. Both the parents and the doctor cannot fail to notice this sign, and therefore send the child to hospital as a ? laryngeal diphtheria. Recession, however, may be present in any form of dyspnoea, e.g. laryngeal obstruction, broncho-pneumonia and cardiac failure. In young children, the bones of the thoracic cage are soft (in Bantu children often very soft, due to associated rickets), which may cause a child, suffering a moderate amount of dyspnoea, to respond with an alarming amount of recession in the epigastrium. We have often seen marked abdominal recession in a child with laryngitis, yet sleeping quite peacefully. Abdominal recession *per se* is, therefore, not as overwhelming an indication for tracheotomy as it may seem, unless combined with supra-clavicular recession, and other features of laryngeal obstruction.

2. *Restlessness.* This is a most important indication as to the extent of the laryngeal obstruction. The choking child will not lie quiet for a moment. The rolling of the eyes, the frantic shaking of the head from side to side, the continual attempt to adopt a sitting or standing position, which somehow seems to ease the frenzied attempt to breathe freely, the almost literal 'climbing up the walls', have only to be seen once to be remembered, and appreciated always, as an important indication for relief of the obstruction. If a child can lie quietly or sleep, one can afford to wait before interfering, despite the presence of recession and marked stridor. Care must be taken, however, not to regard an exhausted, pale, collapsed child, in the terminal stages of obstruction, as a quiet, peaceful child that does not require tracheotomy.

3. *Non-response to Treatment.* This is a natural corollary to (2). All suspected cases of laryngeal diphtheria are treated routinely with Penicillin, often with sulphonamides, and are given an adequate dose of anti-diphtheritic serum. In addition the child is given sedation in the form of Luminal (1-2 grains) and steam inhalation. Morphine or codeine, however, should never be used for the purpose of sedating a child with laryngeal obstruction. A child with seemingly marked distress, especially where the obstruction is catarrhal in nature, may respond to treatment as outlined, and will often calm down and fall asleep within an hour or two of admission. If, however, the child does not respond, and is restless as ever, the necessity for mechanical intervention becomes more clearly defined.

4. *Presence of Membrane in the Throat.* The presence of membrane in the throat, clinically diagnosed as diphtheritic, is a rather important indication for an early tracheotomy, in a child with laryngeal obstruction. It presupposes the cause of the obstruction to be due to the mechanical interference of membrane in the trachea. Oedema may diminish, and

exudate may dry up, but the distressed child with diphtheritic membrane is unlikely to improve spontaneously. Either the membrane will increase in extent and lead to a greater degree of obstruction, or it will slough off, and thus act as a foreign body in causing distress, and interference with respiration. The presence of membrane, therefore, is an important factor in weighing up the pros and cons of an early tracheotomy.

5. *Rising Pulse Rate.* A child with laryngeal obstruction usually has a fast pulse rate. However, if, while under observation, the pulse rate begins to rise steadily, the necessity for mechanical intervention becomes more urgent, before a state of exhaustion is reached. The importance of this is stressed by Priest.¹²

6. *Diminished Air Entry.* If the obstruction to the passage of air is of such severity as to cause absent, or diminished, breath sounds bilaterally, then a tracheotomy is often indicated. Unilateral diminished air entry, however, may be due to an accompanying pulmonary pathology, and is not of significance.

7. *Cyanosis.* The presence of cyanosis is a grave indication of the severity of oxygen deprivation, and there should be no hesitation in going ahead with a tracheotomy, provided no other cause for the cyanosis can be found.

THE OPERATION

The operation is well known and described fully in many textbooks and in articles by Patterson,¹⁴ Waldapfel,¹⁵ and others. A few points of interest may be mentioned.

1. *Site.* Nearly all authors to-day recommend low tracheotomy, and only mention high tracheotomy to condemn it as a potential cause of cricoid stenosis. In this series, nearly all patients had a low tracheotomy.

2. *Anaesthetic.* In this series, 14 patients had a general anaesthetic, 60 had a local anaesthetic, and 36 had no anaesthetic at all. The mortality rates were: 36% in the first group; 38% in the second, and 66% in the third group. There is no statistical significance between the 2 groups who had anaesthetic, while the high mortality in the group without anaesthetic is due to the greater severity of those cases, with no time available for the administration of any form of anaesthetic. Local anaesthetic was usually regarded as preferable, and most authorities maintain this point of view.^{2, 4, 14, 15} Bayer,¹⁰ however, prefers the use of a general anaesthetic, and maintains that he has seen only one death on the table since 1920 as a result of the anaesthetic (1939).

Post-Operative Care. The post-operative care is of extreme importance. Despite the immediate relief that a tracheotomy usually brings about, the operation as such is a mere incident in the course of the disease, and the most vigilant post-operative care is required to prevent the child suffocating from the accumulated secretions in the trachea. Here, too, a few points are worthy of note.

1. *Sedation.* After the shock of the operation, and to prevent any further exhaustion, sedation is necessary. It is usually administered in the form of Luminal, or chloral hydrate. Over-sedation, however, is contra-indicated, as the child may not be able to respond sufficiently, when secretions threaten to block the airway.

2. *Suction.* This is most important and should be done whenever necessary. Care must be taken that the suction tube is not inserted too far down the trachea, and that over-suction is not carried out, as this may lead to pulmonary collapse.

3. *Steam.* Steam and inhalations of Friars' balsam are most useful, especially in cases of acute non-specific laryngitis.

4. *Oxygen.* Oxygen is used to assist the child in the immediate post-operative period where child is exhausted. McCaskey¹⁷ favours the use of oxygen given through water, so as not to be dry, and lead to crusting of secretions in the trachea.

5. *Post-Operative Complications:* (a) *Apnoea.* After the operation there may be a period of apnoea, sometimes even lasting a few hours. This is due to a gradual elevation of the



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1. DiCaprio, J. M., and Ranta, L. A.: Arch. Int. Med. 80:449 (Nov.) 1950.

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CO₂ threshold before tracheotomy, due to the respiratory distress. When the operation is carried out, the patient quickly washes out the accumulated CO₂ in the blood, and the respiratory centre goes through a period where it is temporarily not stimulated. This condition usually passes off quickly, but sometimes artificial respiration may be necessary.

(b) *Excess tracheal secretions* may be present for the first few days, but adequate suction will prevent any respiratory embarrassment (Priest 12).

(c) *Swallowing difficulties*, probably reflex in nature, are sometimes encountered during the first few days, after tracheotomy. If this is severe enough, nasal or intravenous drips may have to be used for feeding the patient.

(d) *Oesophago-Tracheal Fistula*. Four cases were present in this series, one immediately after the operation, and the rest apparent between 4-7 days after the operation. These were regarded as due to pressure necrosis of the tracheotomy tube, against the posterior wall of the trachea, and possible necrosis due to the presence of membrane. It is, therefore, always important to nurse the tracheotomized patient with the head not flexed, and a cushion under the shoulders. Regurgitation of food through the tracheotomy tube is a cardinal feature of the complication, and may result in an aspiration pneumonia. Feeding, therefore, has to be carried out by nasal or intravenous drips, and the fistula usually closes within a week.

(e) *Shock*. This can be considerable, especially in young children, and where patient is already exhausted. Speed in the operation is essential, and the mortality rate is considered to be directly proportional to the time spent by the patient on the operating table.

(f) *Cricoid Stenosis*. No regular follow-up was carried out, but no patients with this complication were observed.

6. *Decannulation*. By the fourth day after the operation, an attempt is made to remove the tube, and in nearly all cases decannulation was successful within a week. One patient with tuberculous laryngitis required the tube to be in for 16 days. Neffson⁴ gives an average of 15 days with the tube in the trachea and mentions tracheal stenosis as the causative factor, while Everhart's¹⁶ cases averaged 12 days with the tube in the trachea. Most authorities, however, agree that the tube should be removed within a week, if possible.

7. *Hospital Stay*. This varied from 3-11 weeks with an average stay of 6 weeks for the patients surviving tracheotomy. In Napier's² series, the average stay in hospital for laryngeal diphtheria was 7 weeks.

In laryngeal diphtheria associated with measles there were no deaths.

In patients with tuberculous laryngitis, one patient died of a miliary tuberculosis, involving the lungs, larynx and intestine (autopsy report).

Sex. The difference in mortality between males and females was not of statistical significance.

Age. Age is an important factor in the mortality rate. Mortality rates varied from 60% in those patients under the age of 2 years to 47% in the 2-5 years' age group, and 50% in those over the age of 5 years.

For this series as a whole, the mortality rate was 53% and the mortality corrected was 51%.

CAUSE OF DEATH

This was difficult to ascertain as no autopsies were carried out. In 4 patients who died, an associated bronchopneumonia was present. In the majority of patients, however, the cause of death was assumed to be due to toxæmia, causing an acute toxic myocarditis. One patient, 6 weeks after tracheotomy, developed a post-diphtheritic pharyngeal palsy, and died, presumably of an acute toxic myocarditis since post-mortem was refused. Another patient developed oedema glottidis 4 weeks after tracheotomy, and died despite another tracheotomy. A complete heart block was the cause of death in a child one day after tracheotomy. There were 2 deaths in the 4 cases with 'bull-necked' diphtheria. Bayer¹⁹ found the most common causes of death in laryngeal diphtherias requiring tracheotomy to be:

(a) Spread down the trachea into the lungs;

(b) Cardiac failure, shock and toxæmia;

(c) Bronchopneumonia

in that order. Napier's figures² support this contention. Cummings¹¹ mentions exhaustion as the cause of death in his cases of laryngo-tracheo-bronchitis.

TABLE 2

Etiology	Males		Females		Under 2		2-5		Over 5		Total			
	No.	D.	No.	D.	No.	D.	No.	D.	No.	D.	No.	D.	%	Cor. %
Laryngeal diphtheria ..	48	34	37	19	38	26	42	23	5	4	85	53	62%	59%
Acute non-specific laryngitis ..	13	5	1	—	5	4	6	1	3	—	14	5	35.7	
Tuberculous laryngitis ..	2	—	3	—	2	—	1	—	1	1	5	1	20	
Miscellaneous (3, 5, 6, 7— Table 1) ..	10	—	3	—	5	—	3	—	1	—	7	—		
Total ..	66	39	44	20	49	30	52	24	10	5	111	59	53%	51%

Mortality. An analysis of the mortality figures in this series is presented in Table 2, according to etiology, age and sex.

Etiology. The highest mortality rate was found in cases of laryngeal diphtheria, with a mortality of 61.9%. However, 5 cases arrived in a moribund condition and were probably dead before the operation was even begun. Excluding these cases the corrected mortality rate is 59.4%.

In cases of acute non-specific laryngitis, the mortality rate with 14 cases was 35.7%. This is surprising, since most overseas figures give a higher mortality rate for this form of laryngeal obstruction than for laryngeal diphtheria, but the series is too small for serious comparison.

PROGNOSIS

Despite the natural sense of relief after a tracheotomy has been carried out successfully, the prognosis should always be guarded. The course of the disease following the operation is most uncertain, especially in cases of diphtheria, where the additional toxic factor is present and may cause unexpected complication some weeks later. A few factors, however, are useful in providing a rough assessment of the prognosis.

1. *Etiology*. In this series patients with laryngeal diphtheria had a greater mortality rate than any other condition requiring the operation. No definite statistics can be given, but the impression was that the greater the extent of the membrane,

the higher the mortality rate. Napier² maintains this view. In Togashi's¹³ series of 22 deaths, 11 were patients with 'bull-neck' diphtheria.

2. *Age.* In this series age is a definite factor in assessing prognosis. The older the child, the better chance there is of survival after tracheotomy. Although Napier² does not regard age as a factor in determining prognosis, other authors do. Neffson⁴ found a 50% mortality in infants under the age of 1 year in non-diphtheritic cases. Bayer¹⁰ found a 70% mortality in patients under 1 year, and a 40% mortality in those under 2 years; and therefore regards the prognosis in children under 1 year as hopeless. Eschenbrenner,⁹ too, maintains the view that age is an important factor.



Fig. 1. Showing decline of mortality after the first 48 hours after operation.

3. *Time Factor.* The most critical period after tracheotomy is the first 72 hours. Most patients surviving this period have a reasonable prognosis. Fig. 1 demonstrates this factor, as found in this series.

Forty-two of 59 fatal cases died in the first 48 hours after operation. Bayer¹⁰ found that 89% of the fatal cases died in the first 72 hours, and considers the chances excellent after the fourth day. Togashi¹³ quotes Josberg and Miller who saw 503 cases of laryngeal diphtheria, of which 25% died in the first 24 hours.

4. *Temperature.* This may be a slight indication as to prognosis. In this series, 10 fatal cases had temperatures above 104° F at the time of death. A persistently high temperature appears to be a bad prognostic sign, but the presence of a mild pyrexia is not of any prognostic significance.

5. *Presence of Complications.* No statistics are available but the presence of pneumonia, nephritis or myocarditis will make the prognosis more uncertain. All the cases with oesophageo-tracheal fistulas as a complication, however, recovered.

6. *Chemotherapy.* All patients in this series received the benefits of chemotherapy, either Penicillin or sulphonamides, or both. The over-all mortality, however, is not in any way lower than statistics quoted from earlier times, especially as regards laryngeal diphtheria. Neffson⁴ regards the use of chemotherapy as inconclusive in lowering the mortality figures for tracheotomies. As all cases had chemotherapy, no comparison can be made.

DISCUSSION

In comparing statistics for tracheotomy, it must be realized that other hospitals often use, and sometimes even favour, intubation as a form of treatment. All cases where tracheotomy has been done after intubation have therefore been excluded. Figures for tracheotomy alone therefore may not give a true reflection of mortality, and severity of obstruction, where an alternative form of treatment is available. In Togashi's¹³ series, tracheotomies were done as a matter of choice, while in Bayer's¹⁰ series all cases underwent tracheotomy and no intubations were done.

Table 3 analyses the mortality rates as reflected in a representative survey of the literature for tracheotomies done in non-diphtheritic and diphtheritic cases. The overall mortality rates in both types of cases was 40%. Smaller series, however, give a greater variation in mortality. Neffson and Wishick³ did 4 tracheotomies for diphtheria and Howard¹⁰ did 5 tracheotomies, both with 100% mortality.

That little progress has been made in the lowering of mortality rates especially for diphtheria, is evidenced by Napier's² quotation of Goodall,¹ who gives a figure of 40% mortality in primary tracheotomies in 1928. It is to be expected, however, that patients with non-specific acute laryngo-tracheo-bronchitis should survive tracheotomy to a greater degree than hitherto, provided the condition is recognized in all its gravity, tracheotomy done before the patient is exhausted, and full use made of the antibiotics available.

The figures in this series show a higher mortality rate in laryngeal diphtherias as compared to statistics quoted in the literature. This may be due to the poor resistance of the non-European child to any form of infection, as a result of malnutrition, and the tendency of an unenlightened population to defer getting medical treatment until the patient is seriously ill, and in some cases moribund.

SUMMARY

A series of 111 tracheotomies in non-European patients from 1945-1951 is presented and analysed according to etiology, age and sex. The majority of cases had laryngeal diphtheria. Some indications for tracheotomy are mentioned, as well as a few points concerning the operation, and post-operative care. Mortality rates in the series are analysed, and show an overall rate of 51%. A survey of the literature revealed an average 40% mortality for tracheotomies, which has shown little improvement in the

TABLE 3

Diphtheritic				Non-Diphtheritic			
Author	No.	Died	Mortality	Author	No.	Died	Mortality
Napier	55	14	25%	Neffson	133	47	36%
Eschenbrenner	44	30	68%	Richards	28	17	60%
Togashi	48	22	46%	Kully	29	2	7%
Bayer	124	41	33%	Smith	12	4	33%
				Gittins	20	12	60%
				Cummings	14	7	50%
Total	271	107	40% average	Total	236	89	38% average



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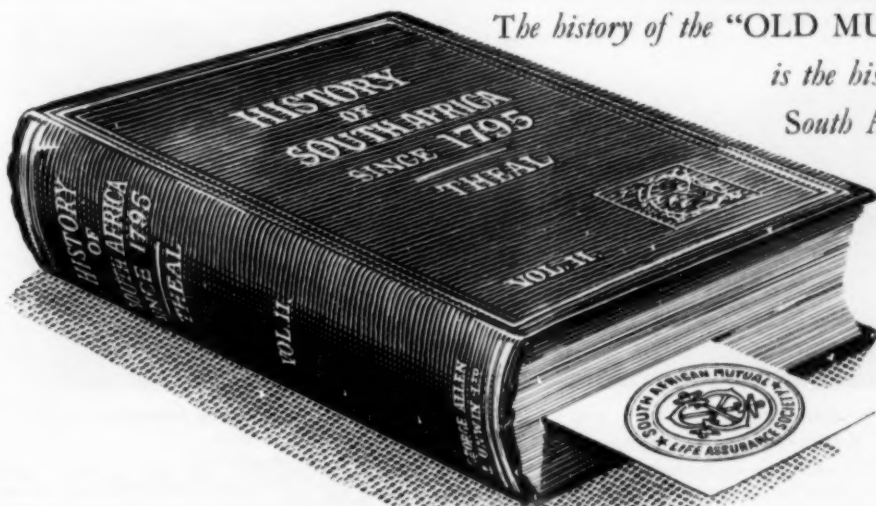


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I wish to thank Dr. J. W. Scott Millar, Medical Officer of Health, Johannesburg, for permission to publish this article, and Dr. B. Gaylis, Superintendent, Waterval Hospital, for his kind assistance and co-operation.

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A RARE ANOMALY OF THE NOSE IN A BANTU MALE

T. MULLER, M.B., Ch.B.

Department of Anatomy, University of Pretoria, Pretoria

The body of an adult Native male was received in the Department of Anatomy, University of Pretoria, from the General Hospital, the cause of death being given as status epilepticus, with a terminal pneumonia.

Case History. Idiopathic epilepsy. Deformity of the face.

Examination. The body was that of an adult Native male. The anomaly of the nose was the only visible one

region of the nose showed a very thick dermis with massive collagen bundles but no evidence of tumour growth. Sagittal section of the head again showed the thickness of the soft tissue in the region of the nose (Fig. 3). The brain appeared small, the frontal lobe especially looking stunted; the weight of the brain was 1,270 gm. The cadaver had been injected with formaldehyde, consequently the brain was fixed and hardened. Histological examination of the brain showed no obvious changes, but because it was post-mortem material, special stains could not be carried out.



Fig. 1. Front view of the face.



Fig. 2. Side view of the face.

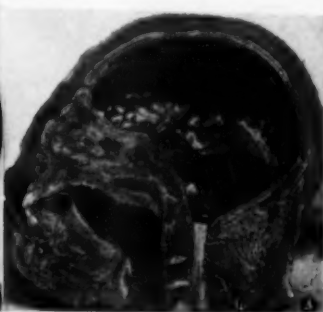


Fig. 3. Sagittal section of the head.

(Figs. 1 and 2). The nose resembled the snout of a pig and the eyes were set wide apart. The hair had a peculiar configuration. No harelip or split palate was present.

Dissection revealed no other congenital abnormalities. The subject had magnificent muscles; the pyramidalis muscle was twice as large as that usually seen.

Histological examination of the soft tissues in the

Several X-ray photographs were taken of the skull and nose. No gross abnormality could be detected.

Discussion. Was this a congenital abnormality or a pathological condition? Histological examination of the soft tissues and X-ray of the skull excluded any underlying pathology as the cause of this anomaly. If we assume, therefore, that this was a congenital abnormality

of the face involving only the nose with no associated harelip or cleft palate, the question arises how and when this defect originated.

In order to appreciate this anomaly, it is essential to review the normal development of the human face¹ from the fourth to the seventh week of embryonic life (Fig. 4).

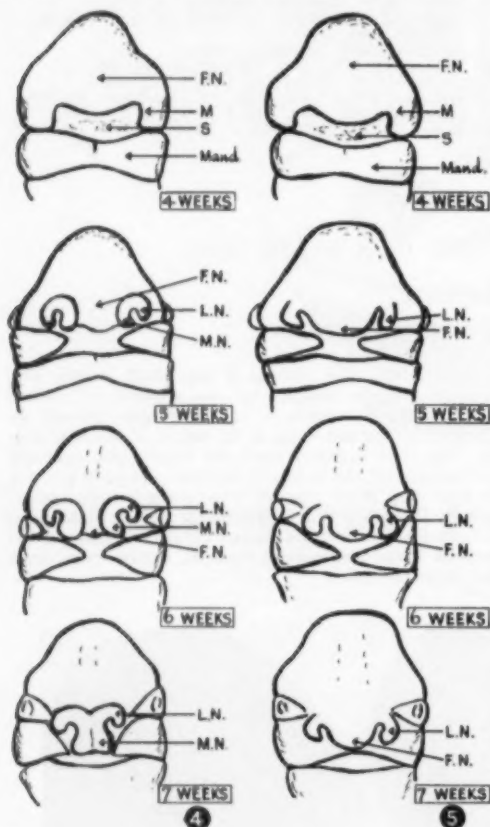


Fig. 4. (Re-drawn from *Human Embryology* by Bradley M. Patten.)
F.N.—Frontonasal process.
M.—Maxillary process.
S.—Stomadaeum.
Mand.—Mandibular process.
L.N.—Lateral nasal process.
M.N.—Medial nasal process.

In a 4-week embryo the most conspicuous landmarks are the stomadaeal depression and the mandibular arch which constitutes its caudal boundary. The maxillary process is still relatively under-developed. During the fifth week most of the structures which take part in the formation of the face and jaws are already clearly distinguishable. In

the midline, cephalic to the oral cavity, is the overhanging frontal process. On either side of the frontal process are horseshoe-shaped elevations surrounding the olfactory pits or depressions. The medial parts of these elevations are known as the nasomedial processes or globular processes. The lateral limbs are called the nasolateral processes. Growing toward the midline from the cephalo-lateral angles of the developing mouth are the maxillary processes. During the six week the nasal processes grow very rapidly, completely overshadowing the frontal process. The growth of the medial processes is very marked. They are almost in contact with the maxillary processes laterally, and fuse in the midline with each other. The structures taking part in the formation of the upper lip are: the globular processes, fusing to form the philtrum of the lip, this fusing in turn with the maxillary processes laterally. The lower lip is formed from the mandibular arches. The various parts of the nose are formed by the following structures:

Bridge: Frontal process; alae: nasolateral processes;
Septum: Fusion in the midline of the nasomedial processes;
nasolacrimal duct: line of fusion of the nasolateral process with the maxillary process.

As a possible explanation for this deformity of the nose I would postulate the following sequence in the development of the face:

During the fifth week of embryonic life, the medial nasal or globular processes failed to develop. There was an excessive development of the frontonasal process, which is an unpaired structure, while the lateral nasal processes developed in the usual way. The failure of the medial nasal processes to develop resulted in a nose resembling the snout of a pig, with the eyes remaining in the embryonic position (Fig. 5).

There are very few data of similar conditions to be found in the literature. In *Human Embryology* (Fig. 255 A, p. 440), Patten¹ illustrates a case where there is a comparable defect of the nose complicated by a harelip and a cranial defect. On p. 396 of his book Patten says: 'There are a few cases on record in which the separation of the two halves of the nose is the only conspicuous malformation.' The figure mentioned was drawn from a specimen in the Pathological Anatomical Museum, Vienna. Stupka describes in his book *Die Missbildungen und Anomalien der Nase*² a very large variety of congenital anomalies. The cases described, however, are not the same as the one under discussion.

It is interesting that this defect of the frontal process should also be associated with a brain defect manifesting itself as idiopathic epilepsy.

SUMMARY

A rare anomaly of the nose is reported associated with a brain defect manifesting itself clinically as idiopathic epilepsy.

Acknowledgments are extended to Prof. J. Barnetson (Department of Pathology, University of Pretoria) for help and advice; to Dr. G. W. Corner, Carnegie Institution of Washington, Baltimore, U.S.A., for interest in the case; and to Dr. J. B. Lups (Department of Anatomy, University of Pretoria) for German translations.

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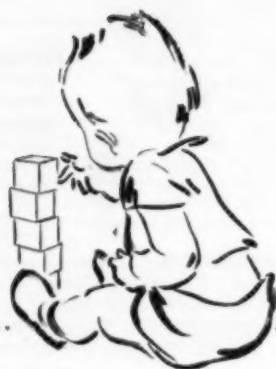
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THE SHORTAGE OF NURSES

J. D. JOUBERT, F.R.C.S., F.R.F.P.S., M.B., Ch.B., B.A.

Umtata

Nurses are in great demand the world over. I know very little about the education, examinations and living conditions of nurses in other countries, but I have seen enough of what goes on in South Africa to feel justified in making some observations and putting forward some suggestions.

Almost every person in this country is aware of the acute shortage. The nursing profession knows it full well, and because they are short staffed their work is heavier than it should be, their hours longer, their duties more arduous and the strain greater. In a vicious cycle, they therefore either give up nursing as a profession whereas otherwise they might have continued, or fewer candidates offer themselves.

The medical profession is always harping on the topic at Federal Council meetings, resolutions have been taken, committees have been appointed and memoranda have been written and discussed, but no real progress has been achieved.

The public discusses the situation at N.C.W. meetings, at all kinds of organizations, and in their homes, buses, etc., but no concrete resolutions are taken and no solution is offered.

The nurses themselves talk, complain and grumble.

Individual Members of Parliament may be interested, but no concerted effort has been made to tackle the problem in real earnest.

The Nursing Council blames the Government for underpayment, poor working conditions and lack of understanding; but it has always been helpless and unsuccessful in its efforts.

In the meantime, things are going from bad to worse, wards are closing all over the country, hospitals have longer and longer waiting lists of patients, and immense suffering is going on.

The position is likely to worsen year by year and soon there will be chaos, a national calamity of the greatest order.

This shortage really started during the last war, when numerous girls who would otherwise have become nurses, joined one or other war service. Those who remained in the nursing services had to work too hard, very little was done to improve their conditions, and so the decline started.

Then came the added burden of more difficult examinations, raised standards, the closure of smaller training schools, and the vicious cycle was given its final impetus.

It is now time to act immediately to avert this national disaster. Unfortunately, the people who are in a position to do something, mostly live in the larger centres—in Cape Town, Durban, Johannesburg, Pretoria. They live where there are large hospitals with numbers of nurses, and where there are still numerous applicants. They therefore do not feel the pinch so acutely just yet. We, in the smaller places, have been suffering for several years, but sooner

or later the position will likewise affect those who think they are relatively immune.

The 'powers that be' are too inclined to think that medicine and nursing are only for big places; they like to disregard the problems of the smaller towns, the farm's people, the far-away places that 'scream helplessly in the wilderness'; but please remember that *elke hond kry sy dag!*

The programme should be on the following lines:—

1. The medical and nursing press must get the lay Press to support them in an appeal to every Member of Parliament, the Senate and the Provincial Councils, to make it his or her business to see that nurses get a square deal. These girls do hard work, noble work, trying work. They have long hours, night duties, they work on Sundays, Saturday afternoons and public holidays when most other girls are enjoying themselves. They are exposed to illnesses, the handling of conditions which would turn the average lay person green, and surely, in return for this sacrifice to the individual and the State, they have the right to claim not only decent salaries, assured pensions, but also the best of food, good comfortable accommodation, happy surroundings, sporting facilities and, in fact, everything of the best.

Parliament, Ministers and Provincial Councils must be forced by public opinion to see to it that these things are given to the nursing profession in an unstinted way, immediately and forthwith.

2. The public must be influenced to appreciate the position; girls who can do so must realize that they have a duty to the State and to their relatives and friends; they should be prepared to look after them.

3. The Nursing Council must be prevailed upon to admit that its programme of the last few years has failed utterly, not because it is not a good programme, and not because it was not instituted with the best intentions, but because there is a general man and woman shortage throughout the country, and there are numerous other 'jobs' open to young girls with less hardships and less 'sweating' attached to them, and at the same time supplying more freedom, better remuneration, more fun and better hours.

It appears to me that to-day the Nursing Council is trying to turn out perfect nurses with a sound scientific knowledge. Now, if candidates were coming forward in their thousands, this would be an ideal scheme, and we would have a real Utopia in our hospitals; but, actually, with the depleted and further diminishing numbers, it simply means that far too few expert nurses are being trained, and the country as a whole is being starved of nurses. What is the use of having a few well-trained people who cannot possibly cope with the masses of sick people?

Furthermore, it would appear that all nurses are being trained as if they are all going to look after people who are going to have the most intricate operations and

procedures performed on them—gastrectomies, pneumonectomies, and the like; whereas in actual fact this type of specialist work still forms only a small fraction of the vast amount of general medical and surgical work that goes on.

Why not, then, first train nurses for that work which forms 90% of all their work, and then let them 'specialize' later if they so desire. Such a scheme would provide nursing staff for the numbers of smaller hospitals that can never hope to tackle big surgery.

Furthermore, if the standard was not made so high, and if the curriculum did not include a knowledge of such procedures as are only done in larger centres, it would mean that smaller hospitals could again train nurses, and so restore the numbers of trainees and trained personnel.

I know that an effort is being made in this direction and that it is hoped to grant certificates or diplomas to girls with a less specialized knowledge of nursing. This will certainly help, and for want of something better, should have been implemented years ago; this scheme has been discussed for at least 4 years and, as far as I know, very little has been done to bring it into force. With matters as serious as they are, anything that is considered to be helpful should have been instituted at once.

But perhaps it is just as well that the diploma scheme has not been instituted yet, because I feel convinced that it is not a good thing to create two separate and distinct systems of examination. The girls who merely have a diploma will always be looked upon as an inferior type; they will never really be accepted in nursing circles, doctors will not have so much faith in them, and patients will not have the same respect for them. The result will be that girls will think twice before starting out on such a career, and I predict a total collapse of the scheme eventually.

For the same reason I consider the present scheme of Nursing Aids a bad one. These Aids get very little tuition, they never stay for long, and too much strain is placed on the Sisters and Staff Nurses who run wards with the help of Aids. The better ones soon become bored as they realize they are at a dead end. They leave the hospital that does not supply training facilities to go elsewhere where they can train.

Others are less ambitious. They 'stick it' for a year or two at the most, and off they go. Who can run a hospital in such a way? I pity the Matron, the Superintendent, the nurses themselves, the doctors and, most of all, the suffering public.

May I then, in all humility, make the following suggestions to the Nursing Council:—

1. Restore Training Schools to all hospitals where a fair amount of decent general work is being done.

2. Recruit nurses then from areas surrounding these hospitals. Numbers of girls will be prepared to go to a hospital nearer their home, whereas they might not be prepared to go hundreds of miles to the nearest large training centre.

3. Forget about Nursing Colleges for these young probationers; let them learn simple practical nursing, the essentials of sepsis, dispensing medicines, giving injections, doing dressings, diets, enemata, etc. Forget about detailed anatomy, physiology, medicine, surgery. We need thousands of girls to nurse our thousands of sick people; we do not need doctor-nurses. At the end of 2 years, allow

them to write an examination on practical nursing, and if it is evident that they are now useful in a ward, that they are not a danger to the patient, and that they are capable of executing routine orders as issued by doctors for ordinary patients with the ordinary diseases that constitute 80% or 90% of the ailments and ills of humanity, grant them now certificate which entitles them to be called Junior Staff Nurses. At the same time their uniforms should be changed, also their caps and badges, and their remuneration and standing in the hospital. Such a step-up will serve as encouragement, more will come and more will stay, and the sense of having achieved the first aim and object will be a stimulus to further efforts for further achievements.

If a Junior Staff Nurse does a further 2 years of hospital service, let her then write a further examination, again largely practical, but now with a little more theory thrown in, a little more anatomy and physiology; then she becomes a Senior Staff Nurse with a further rise in salary.

I cannot stress too much the importance of demanding up to this stage in a nurse's career mainly a practical knowledge and understanding of the commoner conditions in surgery, medicine, etc. I have been in a large general practice for 20 years in a hospital with 260 beds. I think I can claim to be meticulous and painstaking in all my work, medical as well as surgical, and I can definitely state that I demand from my nursing staff only a knowledge of practical work. Some nurses know all about Rh factors, but they cannot set a blood transfusion or intravenous cut-down; ask them to set up a Wangenstein apparatus and they have no idea whatsoever, but they can tell you all about nephritis, blood counts and the like.

When we still had a training school for Europeans in Umtata Hospital, many girls had to leave because they could not get through the preliminary examinations; yet I know that those same girls were excellent nurses and would have been an asset to any hospital.

Lastly, if we must have Nursing Colleges, let the Senior Staff Nurses who want to become Sisters, go to them. Let them learn as much anatomy, physiology, bacteriology, pathology, medicine and surgery as the Nursing Council might deem fit, and if they have the brains to get through such examinations, let them then become Sisters or Senior Sisters, if it is not desired to preclude them from becoming ordinary Sisters without this post-graduate higher degree.

To reiterate, I feel it is wrong and inadvisable to train nurses of varying grades and standards, and to differentiate between Nursing Aids, Nurses with diplomas, and Nurses with certificates. Rather have varying steps along the same line of education, the one leading to the next, and serving as an encouragement to tackle the next, or aim for it. Secondly, again let us be satisfied with the lower degrees, practical qualifications, nurses who can serve the masses, and let us train such girls at all hospitals by the hundred, no, by the thousands! When once we have the numbers the competition will be greater, all hospitals, clinics, etc., will be served, and there will be more girls available to qualify for the higher degrees.

The Nursing Council must tackle this matter immediately; all else must be put aside, and the scheme must be steam-rollered through with modifications, I am sure, such as will be thought of by those who have had more experience.

The medical and nursing journals must whip up sym-

pathy for the cause as outlined, doctors and nurses throughout the country must urge their Members of Parliament and Members of the Provincial Councils to tackle the matter now in Government circles; the Minister of Health, Secretary for Health and other responsible people must all be made to realize the importance of tackling the matter at once, to set aside all political battles, party politics and jealousies, and to serve the health of the nation.

The public Press must be appealed to by those members of the profession who have a right to approach it, to stir up interest, to point out vividly the serious dilemma in which the country finds itself, and in this concerted way Parliament and the Provincial Councils must be made to

realize that they must accede to the demands made by the Nursing Council on behalf of its nurses.

SUMMARY

1. The seriousness of the nursing shortage is outlined.
2. A scheme is outlined by which it is felt the nursing curriculum can be simplified and made more practical without in any way endangering lives. The Nursing Council is appealed to do its bit by giving such a scheme a chance.
3. The Government is asked to do its share in popularizing the nursing profession and to provide salaries and other amenities which will in some way compensate the nurse for the noble and hard and trying work she is doing.

QUESTIONS ANSWERED

HYPERTENSIVES AND AIR TRAVEL

Q. An Englishwoman aged 73 is determined to return home this year. Her blood pressure is 240/135 mm. Hg, and in the last year she has had 7 episodes of transient cerebral vascular 'spasm', producing left hemiplegia with aphasia, lasting 5-120 minutes. Her left Babinski reflex is extensor. Would it be safer for her to return to England by sea, or by pressurized jet plane, in which the journey takes only 18 hours? She feels no disability at an altitude of 5,500 feet. I specify jet plane, as these are so free from tiring noise and vibration.

A. The idea that cardiac and arteriosclerotic patients should not travel by airplane is gradually dying out. There is no evidence that these patients are affected adversely by the altitude. This method of travel has the advantage of speed, not an unimportant point with people who are always candidates for some acute episode.

The choice between a jet and an ordinary airplane is perhaps a little more difficult, as information upon the effect of speed *per se*, in such cases, is not yet adequate. If pressurization in the jet is similar to that in other aircraft, this will have little influence on the choice of the method of air travel. The

more frequent stops by jet, and the shorter 'hops' may also make the journey less fatiguing.

ANTI-TETANUS SERUM AND INJURY

Q. Should one administer anti-tetanus serum in all conditions where the continuity of the skin is broken by trauma? What rule should the general practitioner follow?

A. It has been demonstrated beyond the shadow of a doubt that the routine use of antitoxic serum after receipt of a wound or a burn is of tremendous value in preventing the development of tetanus.

It is thus of the utmost importance that every patient with a potentially infected wound should receive an injection of at least 1,500 units of anti-tetanus serum. 'Potentially infected wounds' include all injuries where the skin has been broken by trauma and the general practitioner should administer serum as a routine to such cases.

When conditions are present which favour the development of tetanus, such as compound fractures or retained foreign bodies, or if old wounds require re-opening, it will be necessary to repeat the prophylactic injection of serum.

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Until recent years arthrosis was regarded as an inevitable disease of wear and tear. To this conception, accepted hitherto and still valid, there have recently been added the facts derived from the modern neuropathological approach. In the light of the new neurotherapy, new methods for the diagnosis and therapy of arthrosis are available.

According to Risser, Ruskin and von Bergmann, all symptoms observed in the osseous and cartilaginous systems, as well as those seen in the vascular and muscular apparatus, can be defined as a disturbance of the functioning of the entire apparatus of the joint. Accordingly, one must not regard arthrosis as a primary articular change but rather as a disease which is preceded by various causes resulting in hypersensitization of the nervous organs, leading to permanent hypertonicity of the musculature. This again causes mechanical vasoconstriction, from which proceed trophic disorders of the joint and bone and, consequently, destructive processes within the bone and the cartilage.

The therapy is therefore aimed primarily at neural modification in the direction of relaxing the vascular and muscular apparatus which enables normal nutrition of joint and bone to be resumed. This is achieved by the active substances Carbaminoylecholine, Neostigmine and vitamin B₁₂ contained in GT 50. For stabilization some vitamin C is added. At the same time, the necessary anabolic substances should be supplied in increased quantity to the body; this is achieved by vitamin D₃ contained in high dosage in GT 50, supplemented by calcium preparations (Decalcit) when necessary.

In the preparation GT 50B for women, sexual hormones (oestrone, progesterone) are incorporated in order to eliminate nervous or other disorders which, owing to the diminution of these hormones in the body, are particularly liable to occur in the post-climacteric age.

Reports from the Continent indicate that the first series of 12 injections may achieve complete or almost complete freedom from symptoms in over 50% of cases and obvious improvement in a further 35% of cases.

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BENEVOLENT FUND

INCOME AND EXPENDITURE ACCOUNT FOR THE TWELVE MONTHS ENDED 31 DECEMBER 1951

[illegible]

ACCUMULATED FUNDS ACCOUNT

[illegible]

We report that to the best of our knowledge and belief, and on information supplied to us, the above statements of Income and Expenditure and Accumulated Funds are correct.

Cape Town,
17 March 1952.

Gurney, Notcutt & Fisher,
Chartered Accountants (S.A.),
Auditors.

BENEVOLENT FUND

BALANCE SHEET, 31 DECEMBER 1951

	£	s.	d.		£	s.	d.
<i>Accumulated Funds</i>	33,421	5	11	<i>Assets</i>			
<i>Liability</i>				<i>Investments at Cost</i>			32,417 10 0
The Medical Association of South Africa	40	10	0	Union Government Stocks:			
				£2,500 Union of South Africa, 3½% Local			
				Registered Stock 1962/65	2,450	0	0
				£1,500 Union of South Africa, 3½% Local			
				Registered Stock 1952/57	1,492	10	0
				£1,125 Union of South Africa, 3% Local			
				Registered Stock 1957/64	1,125	0	0
				£1,000 Union of South Africa, 3% Local			
				Registered Stock 1959/69	1,000	0	0
				£1,000 Union of South Africa, 3% Local			
				Registered Stock 1960/70	1,000	0	0
				Shares in Building Societies:-			
				United Building Society (143 Paid-up			
				Permanent Shares of £50 each)	7,150	0	0
				Saambou (Permanente) Bouvereniging			
				(11,700 Fully Paid-up Indefinite Shares			
				of £1 each)	11,700	0	0
				South African Permanent Mutual Building			
				and Investment Society (60 Paid-up			
				Permanent Shares of £50 each)	3,000	0	0
				Loan:-			
				Medical House (Proprietary) Limited First			
				Mortgage on Medical House, Wake			
				Street, Cape Town	3,500	0	0
				<i>Sundry Debtors</i>			466 0 9
				Medical House (Proprietary) Limited	140	0	0
				Interest Accrued	326	0	9
				<i>Cash at Bank</i>			578 5 2
	<u>£33,461</u>	<u>15</u>	<u>11</u>				<u>£33,461 15 11</u>

We have examined the above Balance Sheet with the books and Vouchers of the Benevolent Fund and find it to be correctly stated. We have verified the Securities of the Fund.

Cape Town,
17 March 1952.

Gurney, Notcutt & Fisher,
Chartered Accountants (S.A.),
Auditors.

PASSING EVENTS

Dr. Percy Helman, youngest son of Mr. and Mrs. D. Helman, formerly of Laingsburg, has passed the examinations for his admission as a Fellow of the Royal College of Surgeons (Eng.). Dr. Helman was formerly on the staff of the Union Health Department, Cape Town.

* * *

Peddie's first hospital was opened recently by the Mayor. This is the new 6-bed St. Michael's Hospital, converted from an old dwelling house and modernized by the Roman Catholic Dominican Sisters who will staff the hospital.

The Dominican Sisters also plan to build a hospital for Natives on the outskirts of Peddie in the future.

* * *

The marriage between Dr. Johan Kotze, only son of Mr. and Mrs. P. R. Kotze, of Krugersdorp, and Miss Margaret Stray, eldest daughter of Mr. and Mrs. F. R. Stray, of Purley, Surrey, took place on 8 June 1952.

* * *

The engagement has been announced of Dr. Sam Meltz, eldest son of Mr. and Mrs. I. Meltz, of Wepener, to Jean, youngest daughter of Mr. and Mrs. B. H. Schneider, of Aliwal North.

* * *

Dr. Maurice Arnold, Senior Lecturer in Surgical and Applied Anatomy at the Witwatersrand Medical School, has left for Israel, at the invitation of the Hebrew University, for a period of 3 months, to assist in the inauguration of the Anatomy Department of the Medical Faculty of the Hebrew University in Jerusalem.

MEDICAL PRESS: A PAN-AMERICAN CONGRESS

A Pan-American Congress of the Medical Press will be held in Buenos Aires from 12 to 15 July 1953. This has been arranged in conjunction with the Faculty of Medical Science at Buenos Aires by the International Association of the Medical Press. Those interested should communicate with the Office of the Congress, Library of the Faculty of Medical Science, Buenos Aires, Uriburu 763.

THIRD COMMONWEALTH AND EMPIRE HEALTH AND TUBERCULOSIS CONFERENCE: 8-14 JULY 1952

The Duchess of Kent, President of the National Association for the Prevention of Tuberculosis, has promised to attend the Association's Third Commonwealth and Empire Health and

Tuberculosis Conference to be held in London in July. Her Royal Highness was also present at the 1947 and 1949 Conferences organized by the NAPT, which for over 50 years has been in the forefront of the campaign for the control of tuberculosis.

EMPIRE MEDICAL ADVISORY BUREAU

South African medical practitioners who are thinking of visiting the United Kingdom should get into touch with Dr. H. A. Sandiford, Medical Director of the Bureau, at B.M.A. House, Tavistock Square, London, W.C.1, so that all the facilities of the Bureau will be placed at their disposal.

Medical practitioners will find the Bureau helpful in arranging accommodation as well as post-graduate courses of study.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH

At a Quarterly Meeting of the College held on Tuesday, 6 May 1952, the President, Dr. W. A. Alexander, in the Chair, the following were elected Fellows of the College:

Ronald Foote Robertson, M.B. (Edin.).
John Taylor Randolph Russell, M.D. (Edin.).

The following were elected Members of the College:

Gostha Bihari Sinha, M.B. (Calc.).
Sunder Balse, M.B. (Bomb.).
Sanatkumar Hirani Shah, M.B. (Bomb.).
Graham Francis Hall, M.B. (N.Z.).
Michael John Bailey, M.B. (Cape Town).
Sutcliffe Ruttle, M.D. (Belf.).
Deb Prasanna Basu, M.B. (Calc.).
Bal Sitarum Kulkarni, M.B. (Osmania).
Noel Myddleton Mann, M.D. (Cantab.).
Douglas Telfer Kay, M.B. (Edin.).
Oliver Gordon Jones, M.D. (Leeds).
Walter Bolliger, M.B. (Sydney).
Andrew MacFarlane, M.B. (Edin.).
Nathaniel Kemsley Pein, M.B. (Witwatersrand).
William Ian Forsythe, M.D. (Belf.).
William Dawson Hamilton Conacher, M.B. (Glasg.).
Anilkant Dulrai Desai, M.B. (Bomb.).
Zahur Hussain Nurullah Kadri, M.D. (Bomb.).
Shanti Narain Mathur, M.B. (Osmania).
Robert Arthur Kershaw, M.B. (Manc.).
Bermeshwar Prasad, M.B. (Patna).
George Stewart Kilpatrick, M.B. (Edin.).
Roger John Connolly, M.B. (Sydney).
Kenneth Lamonte Stuart, M.B. (Belf.).
John Alexander McLeod, M.B. (Otago).
Balbir Singh Khaira, M.B. (Calc.).

REVIEWS OF BOOKS

GYNAECOLOGY AND OBSTETRICS 1951

The 1951 Year Book of Obstetrics and Gynecology (August 1950-June 1951). Edited by J. P. Greenhill, B.S., M.D., F.A.C.S. (Pp. 567. \$5.00.) Chicago: The Year Book Publishers Inc. 1951.

Contents: Part I. Obstetrics. 1. Pregnancy. 2. Labor. 3. Puerperium. 4. The Newborn.

Part 2. Gynecology. 5. General Principles. 6. Diagnosis. 7. Infertility. 8. Operative Technique. 9. Infections. 10. Benign Tumors and Endometriosis. 11. Special Ovarian Tumors. 12. Malignant Tumors. 13. Menstrual Disorders. 14. Endocrinology. Index.

Gynaecologists the world over have now for many years looked forward to the annual appearance of the *Year Book of Obstetrics and Gynecology*.

The 1951 edition certainly maintains the high standard of its predecessors. Once again Dr. Greenhill is to be congratulated on his excellent choice of abstracts compiled from the literature of so many different countries.

A large part of the interest lies in the author's concise criticisms as well as his masterly summing up of the present

views held on the many controversial subjects in gynaecology. Consequently one cannot help wishing at times for more of the author's comments, even perhaps at the expense of omitting some of the abstracts.

One notes that Dr. Greenhill has now come to regard the bag of waters as of little importance in labour, whereas his predecessor de Lee would not even sanction artificial rupture of the membranes for the induction of labour.

The vast amount of literature on the subject of carcinoma of the cervix is handled admirably. As the author states, a *Year Book* could be devoted almost to this subject alone. Most of these articles deal either with the smear method of diagnosis, carcinoma *in situ* and the increasing use of surgery in treatment.

The 20 quiz questions, as usual, stimulate interest in the articles concerned, although all may not agree with the answers.

All interested in obstetrics and gynaecology cannot but find the latest *Year Book* absorbingly interesting and very well worth adding to the previous editions.

MEDICAL BACTERIOLOGY

Medical Bacteriology, including Elementary Mycology, Protozoology and Helminthology. By Sir Lionel Whitby, C.V.O., M.A., M.D. (Camb.), F.R.C.P. (Lond.), D.P.H., and Martin Hynes, M.D. (Camb.), F.R.C.P. (Lond.), D.P.H. Fifth Edition. (Pp. 544 + viii, with 92 illustrations. 22s. 6d.) London: J. & A. Churchill Limited. 1951.

Contents: 1. The General Properties of Bacteria. 2. Sterilization. 3. The Cultivation of Bacteria. 4. Methods of Examining Bacteria. 5. Infection and Resistance. 6. The Basis of Immunity. 7. Hypersensitivity. 8. Practical Applications of Immunology. 9. Chemotherapy and Antibiotics. 10. Common Contaminating Organisms. 11. The Cocci. 12. Intestinal Bacteria. 13. Corynebacterium. 14. Mycobacteria. 15. Actinomyces and Related Bacteria. 16. Haemophilus. 17. Brucella. 18. Pasteurella. 19. Aerobic Spore-Bearers. 20. Anaerobic Spore-Bearers. 21. The Spirochaetes. 22. Miscellaneous Organisms. 23. Rickettsia. 24. The Viruses. 25. Diseases Produced by Fungi. 26. Protozoal Diseases. 27. Helminth Infections. 28. The Collection and Examination of Specimens. 29. The Bacteriology of Water, Milk and Food. Appendix. Index.

The fifth edition of *Medical Bacteriology* has been rewritten and brought up to date and much new information is available.

The student, for whom the book is primarily intended, will find that the subject is dealt with from the point of view of the clinical pathologist, with the emphasis on the practical aspects of medical bacteriology, and that much of the purely academic material has been omitted.

The chapter on virus diseases is excellent, but one feels that, in a book of this nature, the chapters on protozoal diseases and helminth infections could well have been dispensed with, as it has been impossible to do other than give a very superficial account of these parasites.

HYGIENE

A Synopsis of Hygiene (Jameson and Parkinson). Edited by Llywelyn Roberts, M.D., M.R.C.P., D.P.H., and Kathleen M. Shaw, M.B.E. (Pp. 891 + viii, with 11 illustrations. 42s. 10th ed.) London: J. & A. Churchill Limited. 1952.

Contents: 1. Public Health Administration and the Collection of Vital Statistics. 2. Prevention and Control of Disease, Occupation and Health, Notes on Animal Parasites, Hospitals and Health Services, Disinfection. 3. Infant Mortality, Maternal Mortality, Maternal and Child Welfare, School Health Service. 4. Care of (a) Persons Suffering from Mental Illness or Mental Defectiveness, (b) The Blind, (c) The Deaf. 5. Nutrition and Food. 6. Atmospheric Pollution, Ventilation, Heating and Lighting. 7. Water Supplies. 8. Removal and Treatment of Waste Matters. 9. Sites and Building Construction. 10. Public Health Law (England and Wales).

Appendix: 1. Atmospheric Moisture, Measurement of Humidity, Vapour Pressure Tables. 2. Physics, Calculations and Tables of Factors, Weight and Measures. 3. Table-Composition, Energy Value and Vitamin Contents of Various Foodstuffs. 4. Anthropometric Measurements. 5. Rules of the General Medical Council for the Diploma in Public Health. Index.

It may come as a surprise to some to realize that the science of public health can advance so rapidly that this well-known English textbook has, in a little over 30 years, already reached its tenth edition, including 2 editions during the war and two since. The basic rules of health do not alter much, and some of the old problems may have lost their emphasis, but these repeated editions make abundantly clear the fact that there are still continual developments in this subject.

The new Editor has preserved the old format, the only new chapter being on the care of the mentally deficient, the blind and the deaf. But much new material has been interspersed in the text which is 100 pages longer than the previous edition. Some of the new matters dealt with are BCG vaccination, changing problems of V.D. control, food poisoning, malaria chemoprophylaxis, industrial pneumoconiosis, benzyl hexachloride, Health Centres, health education, care of the aged and the chapter already mentioned. The multifarious pieces of

health legislation still coming forward in England and Wales are also reported fully. As in former editions, the value of the book is greatly increased by frequent references to the latest information on the various topics.

The word *Synopsis* in the title means that we cannot expect the book to be complete in every detail, but there are one or two small omissions noticed by the reviewer. In the list of diseases due to rats, for example, murine typhus has been omitted, though it is included in the list of the varieties of typhus. The characteristic warning signs of intoxication by D.D.T. are mentioned, but a description of the nature of these signs might well have been included.

This book has long been a standard textbook for the Diploma in Public Health, and has been a reliable reference book for all Public Health workers. Judging by this tenth edition, it is likely to remain so.

CLINICAL UROGRAPHY

Clinical Urography. An Atlas and Textbook of Roentgenologic Diagnosis. William F. Braasch, M.D., and John L. Emmett, M.D. (Pp. 736 + v, with 1,361 figures. £10 12s. 6d.) Philadelphia and London: W. B. Saunders Company. 1951.

Contents: 1. Methods in Urographic Diagnosis. 2. The Plain Film of the Urinary Tract. 3. The Normal Urogram. 4. Dilatation of the Urinary Tract; Urinary Stasis; the Obstructive Uropathies; Atony; Neurogenic and Neuromuscular Dysfunction. 5. Urinary Calculi. 6. Nontuberculous Infections of the Urinary Tract. 7. Tuberculosis of the Genito-urinary Tract. 8. Renal Cysts. 9. Tumours of the Genito-urinary Tract. 10. Anomalies of the Urinary Tract. 11. Urethrography, Seminal Vesiculography, Aortography, and Other Special Methods of Examination. 12. Miscellaneous Index.

This book is a timely reminder of the necessity for a radiologist to leave his celluloid tower and to rub shoulders once again with the clinician—in this particular instance the urologist. Modern hospital organization being what it is, the average Urological Department is dependent on radio-graphers for its radiology-technicians who produce pictures that are interpreted by the surgeon himself and more often than not are never seen by the radiologist. As a result, it is not the least bit incongruous that this particular radiological atlas of genito-urinary diseases should be written by two practising urologists, for who more experienced could be found to interpret the films?

The authors have had at their disposal the radiographs of the Mayo Clinic. As would be expected, the selected films are of the finest quality and cover the whole gamut of urological pathology as depicted radiologically. Perhaps equally, if not more important, are the countless normal films which show, with commendable clarity, physiological variation, the appreciation of which is so fundamental in the detection of early pathological change. They rightly stress throughout the fault of finding pathology where there is only normal variation—a not uncommon error in the radiology of the urinary tract.

The text is complementary to the films, clear and concise; the limitations of interpretation imposed by the two-dimensional films are stressed throughout; points of clinical importance and details of urographic technique are discussed as required. Where embryology is necessary as in the understanding of congenital anomalies, simple diagrams and a lucid description can be found. This wealth of pertinent material, usually lacking in urological atlases, brings alive the bare soft tissues of the plates.

The reviewer's enthusiasm for this beautiful work has rather blunted his critical faculties, so that the few points of dispute noted in the text have been ignored completely; it is his opinion that this book is an essential addition to the desk of all radiologists and urologists.

CORRESPONDENCE

VALUE OF BCG VACCINE

To the Editor: When authorities like Prof. G. S. Wilson (Brit. Med. J., 1947, 29 November) and Dr. J. A. Myers of Minnesota warn us about some of the difficulties in the use of BCG

vaccine, it is certainly important that its introduction into South Africa should be controlled carefully.

In Italy Prof. G. Salvio of Bologna has been using a 'dead vaccine' for the past 20 years and the results shown to me suggest that the use of a 'dead vaccine' should be included

in what Mr. W. L. Phillips has called in your *Journal* a 'controlled experiment'. In Bologna 9,000 infants have been vaccinated in the first 2 weeks of life and none has contracted tuberculosis. In Venice, in the Dolo Sanatorium during 1942 and 1943, records were kept of 132 children who, owing to war conditions, were lodged in rooms with persons having active tuberculosis. Of 78 children who were not vaccinated with the Salvioli vaccine there were 11 deaths (9 of these cases were confirmed *post mortem*) whilst there were no deaths from tuberculosis in 54 vaccinated cases. Professor Lodi has records of 'brothers' in 100 families having a high morbidity from tuberculosis. Of 112 cases who had been vaccinated there was no mortality whilst 9 of 167 brothers (living in the same houses and under the same conditions) who had not been vaccinated had died of tuberculosis.

With regard to the tuberculin reaction, it is useful to quote the statistics from the report of the S.A. Institute for Medical Research. Of 32,864 Natives who were negative reactors to a 1:5,000 dilution of old tuberculin 114 (i.e. 347 per 100,000) developed tuberculosis; whilst of 61,115 who were positive 452 (i.e. 738 per 100,000) developed tuberculosis. It was found, however, that in the negative reactors there was little or no tendency to fibrosis and the disease rapidly became generalized whilst in the positive reactors fibrosis occurred and the lesions usually remained confined to the lungs.

Vorwald of Saranac has warned us that the bacilli may remain alive in silicotic guinea-pigs for 18 months or longer.

As far as mine Natives are concerned, it is probable that the use of BCG or Salvioli vaccine (tubercle bacilli are killed by heat in the new V.D.S. preparation) will lead to a reduction in the number of cases of tuberculosis. It has, however, been suggested that its use may result in an increase in the number of cases of tuberculo-silicosis.

Charles Hurwitz.

Box 5765,
Johannesburg.
23 May 1952.

INTERNATIONAL STUDENTS' CLINICAL CONFERENCE

To the Editor: Many of your readers will remember the reports of the *First International Students' Clinical Conference* held in London in 1948. Thanks to the unfailing support of the medical practitioners of South Africa, students were very ably represented by 3 senior medical students.

The *Second International Students' Clinical Conference* is to be held in Paris in the first weeks of July this year. We hope to be in a position again to be represented by 2 students from our own medical schools. However, we will have once more to depend on the generous moral and financial support of our medical profession, if we are to be able to participate. The number of students we can send will depend almost entirely on how much money we can collect. It will cost about £300 per delegate and we would like, if possible, to send at least one delegate from each of Wits, Cape Town and Pretoria.

The tremendous value of personal contact with overseas students and practitioners of medicine, and of insight into the methods used elsewhere both in teaching and practice will be obvious to medical practitioners. The enormous benefit to be derived for our medical students should one of our number participate in such a conference, need not be stressed. This benefit will most certainly ultimately extend to the whole medical fraternity.

Our representatives returned in 1948 with a wealth of new ideas and impressions, many of which have borne fruit in our present-day curriculum and attitudes.

Such schemes as exchange of interns originated at this conference. Such conferences take on added importance when we consider the geographical isolation of the Union from the European seats of learning—an isolation which we would not like to see extended to the academic sphere.

Immediately before the clinical conference, the inaugural conference of the *International Federation of Medical Student Associations* will be covered in London by the *British Medical Students' Association*. This will provide a basis for the continued co-operation of medical students from all parts of the world. South Africa has been invited to send 2 official delegates to this conference and we hope that 2 of the South Africans attending the clinical conference will also represent us at this conference.

The South African participation in these conferences is being organized by an *ad hoc* committee at Wits, and at Cape Town, under the aegis of the Executive of the National Union of South African Students.

We at Wits have already set about selecting a student to represent us at these conferences. He is being chosen from amongst senior medical students in either the fifth or sixth year. A Student Selection Committee has already sat to consider the applicants and it has submitted its selection to the 3 clinical professors who at present are busy making the final Wits selection.

May I commend this worthy cause to the attention of the medical fraternity of this country. Cheques should be made out to N.U.S.A.S., and may be sent to the Convener, Delegates Fund, c/o S.M.C. Office, Medical School, Johannesburg, or direct to N.U.S.A.S., 148 St. George's Street, Cape Town.

G. Getz,
President,
Students' Representative Council.

N.U.S.A.S.,
S.R.C. Office,
University of Witwatersrand,
Milner Park,
Johannesburg.
23 May 1952.

TRANSFER OF PATIENTS

To the Editor: Perhaps in other centres easier and more efficient methods may be in use for transferring patients to and from the operating table, but the method employed in Johannesburg, in hospitals and nursing homes alike, leaves much to be desired.

The premedicated candidate for operation is brought conscious into the theatre, and encouraged to struggle across from the trolley on to the table. If the premedication has been adequate he is not in a fit condition to do this efficiently, even if his general state of health would allow it, and the effort involved goes a long way to counteract the sedative effect of the premedication.

At the end of the operation the usual method here is a combination of slide, push, lift and pull by the nursing staff and the anaesthetist, all doing a great deal of hard, unnecessary work at a gross mechanical disadvantage. A similar sort of manipulation takes place on transferring the patient from the trolley to his bed.

I feel that all these things are bad for the patient, to say nothing of the people who have to do the lifting.

It has been my lot to see different methods of transferring patients in many parts of the world, and I am sure that the simplest method is by far the best. This consists of placing a canvas with two lateral removable wooden poles on the trolley before the patient gets on to it from his bed. The patient could then quite simply, by two normal people, be lifted on to the operating table, after which the poles are removed. At the end of the operation the poles are replaced, and the patient can again be easily lifted without danger to himself or the lifters, both from the table to the trolley, and from the trolley to his bed.

For operations in the lithotomy position a divided canvas can be used, the upper part supporting the head, shoulders and chest, and the lower half the pelvis and legs. The patient is lifted on to the table in the ordinary way, and the poles are left in position. When anaesthesia is established the lithotomy crutches are fixed up, the patient is lifted by the poles down the table to the correct position, the legs are fixed in the supports, the poles and lower half of the canvas removed and the end of the table dropped.

If the various responsible people could be persuaded to spend the very small capital outlay necessary and provide these simple bits of apparatus, it would be doing a great service.

F. W. Roberts.

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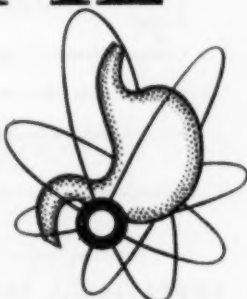


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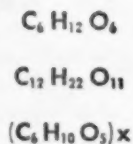
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(PD8) Natal South Coast practice. Would suit retired doctor. European population approximately 100. 31 miles from Bizana, 22 miles from Margate. Premium required £400, includes a good stock of drugs, dressings, instruments and surgery furniture. House for sale £1,800, including stand of ½ morgen. For immediate sale.
(PD9) In large coastal City. Specialist in Physical Medicine wishes to dispose of private practice immediately. Centrally situated Rooms, full equipment and staff including Physiotherapists to be transferred.
(PD11) In large coastal city. General practice with centrally situated Consulting Rooms. Cash receipts 1948, £1,064; 1949, £946; 1950, £554. Owing to ill-health this practice is for immediate sale at £550 including surgery furniture. Scope for midwifery and surgery. Present owner has confined treatment to manipulations and adjustments.
(PD12) In coastal city, General Practice established March 1951. Total Gross Receipts to May 1952, £930. Seller leaving S.A. to specialise. Premium required £350, including drugs, surgery furniture. If outstanding accounts are taken over Premium will be £350. At present only a nucleus, but the practice is expandable as Consulting Rooms are centrally situated.

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Applications are invited for the post of part-time Medical Officer at the School Clinic, Pretoria.

Applicants must be bilingual Union citizens with at least three years' residence in South Africa, and must be registered with the S.A. Medical Council. Experience in children's diseases will be a recommendation.

Salary will be paid on the basis of £340 per annum; duties to be performed on Monday, Wednesday and Friday afternoons from 2-4 p.m. and Saturday mornings from 8.30-10.30 a.m. at the School Clinic, Pretoria.

The incumbent must supply a suitable locum when necessary; no leave is attached to the post. Service may be terminated by one month's notice on either side.

Applications stating full particulars of qualifications, age and experience must reach the Chief Medical Inspector of Schools, P.O. Box 768, Pretoria, not later than 28 June 1952. 35700

Transvaalse Onderwysdepartement

VAKATURE: SKOOLGENEESKUNDIGE DIENS

Applikasies word gevra vir die betrekking van deeltydse Geneesheer aan die Skoolklyniek, Pretoria.

Applikante moet tweetalige Unie-burgers wees, minstens drie jaar in Suid-Afrika woonagtig en moet by die S.A. Geneeskundige Raad geregistreer wees. Ervaring in kindergeneeskunde sal 'n aanbeveling wees.

Die salaris word maandeliks op 'n skaal van £340 per jaar betaal en werksaamhede moet op Maandag, Woensdag en Vrydagmiddag van 2-4 nm. en Saterdagoggend van 8.30-10.30 vm. by die Skoolklyniek, Pretoria verrig word. Die bekleër van die betrekking moet wanneer dit nodig is, 'n aanneembare plaasvervanger verskaf; daar is geen verlop aan die betrekking verbonde nie. Die diens kan met 'n maand wedersydse kennisgewing beëindig word.

Applikasies met volle besonderhede betreffende kwalifikasies ouderdom en ervaring moet die Geneeskundige Hoofinspekteur van Skole, Posbus 768, Pretoria, nie later as 28 Junie 1952 bereik nie. 35700

Wanted

Post wanted as assistant or locum in Cape Town area. Write 'A. L. S.', P.O. Box 643, Cape Town.

South African Coal, Oil and Gas Corporation Limited (S A S O L)

VACANCY: PART-TIME MEDICAL OFFICER

Applications are invited from medical practitioners for the post of part-time medical officer at Sasolburg (near Coalbrook, O.F.S.). The duties are mainly the medical and surgical care of Native employees. Duties will commence as soon as possible and further details may be obtained on request.

Applications stating age, qualifications, experience and marital state should reach the Secretary, Sasol, Private Bag 14, Johannesburg, not later than 27 June 1952.

Suid-Afrikaanse Steenkool-, Olie- en Gaskorporasie Beperk (S A S O L)

VAKATURE: DEELTYDSE MEDIESE PRAKTYSYN

Aansoeke word ingewag van mediese praktisyne om die pos van deeltydse mediese beampte. Die pligte behels hoofsaaklik mediese en heelkundige dienste aan natuurlewerknemers van Sasol op Sasolburg, naby Coalbrook, O.V.S. Dienste moet so spoedig moontlik aanvaar word. Nadere besonderhede is verkrygbaar op versoek.

Aansoeke met vermelding van ouderdom, kwalifikasies, ondervinding en huwelikstaats moet die Sekretaris, Sasol, Private Bag 14, Johannesburg, nie later as 27 Junie 1952 bereik nie.

Iscor Medical Benefit Fund

MEDICAL AND DENTAL SERVICES

Applications are solicited from suitably qualified persons for the rendition of medical, surgical and dental services to members of the Fund residing in Postmasburg, Lohathla, Sishen, Manganore and Kimberley areas.

Full particulars regarding the conditions of employment are obtainable on written application to the undersigned.

P.O. Box 450
Pretoria
4 June 1952

Q. S. van Castricum
General Secretary

Yskor Mediese Bystandsfonds

MEDIESE EN TANDHEELKUNDIGE DIENSTE

Aansoeke word ingewag van paslik gekwalifiseerde persone vir die voorsiening van mediese, chirurgiese en tandheelkundige dienste aan lede van die Fonds te Postmasburg, Lohathla, Sishen, Manganore en Kimberley distrikte.

Volledige besonderhede in verband met voorwaardes van indiensneming is op skriftelike aansoek aan ondergetekende verkrygbaar.

Posbus 450
Pretoria
4 Junie 1952

Q. S. van Castricum
Algemene Sekretaris

Interns Required

Rural mission hospital in Transkei, modern, well equipped, handling medical, surgical and obstetrical cases, requires one senior intern with some surgical experience and one junior intern. To commence duties on or about 1 July 1952. Apply: Medical Superintendent, Nessie Knight Hospital, Sulenkama, Qumbu, C.P.

Provincial Administration of the Cape of Good Hope

HOSPITAL BOARD SERVICE: VACANCIES

1. Applications are invited for the following vacant posts in the Hospital Board Service:—

Institution	Post	Salary Scale	Applications must be addressed to:
Kimberley Hospital, Kimberley	Medical Practitioner, Grade E (Pathologist)	£1 600 p.a. (fixed)	The Director of Hospital Services, P.O. Box 2060, Cape Town.
Settlers' Hospital, Grahamstown	Part-time Medical Superintendent	£900 p.a. (fixed)	ditto

The closing date for the abovementioned posts is 11 July 1952.

2. The conditions of service are prescribed in terms of the Hospital Board Service Ordinance No. 19 of 1941, and the regulations framed thereunder.

3. In addition to the salaries indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees.

4. The successful candidates, if not already in the Hospital Board Service, will be required to submit satisfactory birth and health certificates.

5. Application must be made on the prescribed form (Staff 23), which is obtainable from the Director of Hospital Services, P.O. Box 2060, Provincial Building, Wale Street, Cape Town, or from the Branch Representatives of the Hospitals Department at Cape Town (P.O. Box 1487), Port Elizabeth (P.O. Box 80), East London (P.O. Box 13), Kimberley (P.O. Box 618) and Umtata (P.O. Box 202), or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

6. Candidates must state the earliest date on which they can assume duty. Y267758

Rustenburg Municipality

VACANCY: PART-TIME MEDICAL OFFICER OF HEALTH

Applications are invited for the vacancy of a part-time Medical Officer of Health to the Town Council of Rustenburg at a total remuneration of £420 per annum, on terms and conditions to be laid down by contract between the successful applicant and the Council.

A copy of the agreement which the successful applicant will be required to sign may be obtained from the undersigned on application.

Applicants must be qualified medical practitioners. The possession of a diploma or certificate in public health and/or knowledge of the Public Health Act No. 36 of 1919, will be a recommendation.

The appointment will be in terms of the Public Health Act and subject to the approval of the Minister of Health.

Applications endorsed "Medical Officer of Health", containing particulars of experience, qualifications, nationality, age, marital state, whether bilingual and earliest date duties can be assumed, must be submitted to the undersigned not later than 12 noon on Monday, 14 July 1952.

G. S. Hauptfleisch
Acting Town Clerk

Town Hall
Rustenburg
4 June 1952

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Transvaalse Provinsiale Administrasie

VAKATURES BY PUBLIEKE HOSPITALE

Aansoek word ingewag van kandidate met geskikte kwalifikasies vir die onderstaande poste by Publieke Hospitale in die Transvaal.

Aansoek moet gerig word aan die Geneeskundige Superintendent en Verantwoordelike Geneesheer van die betrokke Hospitaal en moet volle besonderhede bevat aangaande die ouderdom, professionele, akademiese en taalkwalifikasies, ondervinding en huwelikstaaf van die applikant en moet voorts 'n aanduiding bevat van die vroegste datum waarop diens aanvaar kan word.

Hospitaal	Vakature	Salaries	Aanmerkings
Paul Kruger Gedenk, Rustenburg:	Verantwoordelike Geneesheer (1)	£1,000 x 50 -1,200	Plus £180 per jaar huis-toelae. Getroud plus (a) hieronder. Ongetroud plus (b) hieronder.
Pietersburg:	Deeltydse Oogheelkundige (1)	£410 p.j.	Vir 'n tydperk van ses maande. Gesamentlike pos Pietersburg Hospitaal vyf uur per week en Potgietersrust drie uur per week. Moet behoorlik gekwalifiseerd wees deur opleiding en ondervinding.
Pretoria:	Deeltydse Narkotiseur (1)	£205 p.j.	Een sessie per week. Moet opgeleide en geregistreerde mediese praktisyner wees en moet behoorlik gekwalifiseerd wees deur opleiding en ondervinding.
Warmbad:	Kliniese Assistent (2)	£620-780- 820-860	Getroud plus (a) hieronder. Ongetroud plus (b) hieronder.
	(a) £320 per jaar lewenskostetoelae. (b) £100 per jaar lewenskostetoelae.		

Van persone wat aangestel word, sal verwag word om bevestigende sertifikate in te dien, asook om hulle te onderwerp aan 'n geneeskundige ondersoek by die betrokke hospitaal.

Aansoekvorms is verkrygbaar van die Provinsiale Sekretaris, Afdeling Hospitaaldienste, Posbus 383, Pretoria.

Benewens jaarlikse salaris ontvang voltydse werknemers op die oomblik lewenskostetoelae, spoorwegkassie en word verlof toegestaan ooreenkomstig die hospitaal verlofregulasies.

Die sluitingsdatum van aansoek vir die poste is 30 Junie 1952. 35604

Goldfields' Medical Practice

CONSULTING ROOMS

Excellent opening for medical man in the hub of the Free State Goldfields. Admirably suitable consulting rooms available in Harmathell Building, Extension No. 1 (St. Helena), Welkom. For details apply to: W. F. Meyer & Company, Attorneys, Harmathell Building, P.O. Eerstemyn, Welkom.

Intern Wanted

Applications are invited for a vacant post of Resident Medical Officer, as from 1 July 1952 at the Moroka Mission Hospital. Excellent practical surgical experience. Salary (inclusive of cost-of-living allowance) £290 per annum, plus board, lodging and laundry.

Write details to Medical Superintendent, P.O. Box 5, Thaba Nchu, O.F.S.



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A Selection Of BOOTS PRODUCTS Of Topical Interest

PRODUCT	DESCRIPTION	INDICATIONS
METHYLAMPHETAMINE HYDROCHLORIDE B.P.C.—BOOTS— Synonyms: d-Deoxyephedrine hydrochloride; d-Methylisomyn hydrochloride. 5 mg. tablets Bottle of 100. 1.5 ml. ampoules (50 mg.) Box of 6.	As a synthetic, sympathomimetic amine which is effective both orally and parenterally.	As a cerebrocortical stimulant, increases mental clarity, relieves fatigue, decreases sensitivity to pain, is more potent but less toxic than amphetamine.
THEOBROMINE COMPOUND TABLETS—BOOTS— Tablets, Bottles of 25 or 100	Each tablet contains: Theobromine, B.P.C.—5 grains (0.3 G. approx.) Phenobarbitone, B.P.— $\frac{1}{2}$ grain (30 mg. approx.) Glyceril Trinitrate—1/120 grain (0.5 mg. approx.)	An effective palliative treatment for hypertension associated with nervous stress. Adjuvant to routine treatment of angina pectoris and other cardiovascular disorders. Helps maintain reduced blood pressure and increases diuresis, allays sense of apprehension, improves coronary circulation.
ALIMEX: Bottle of 8 fl. oz.	A colloidal preparation of aluminium hydroxide for prolonged effect with magnesium hydroxide for immediate action.	Acid dyspepsia and gastro-intestinal irritation. A valuable adjunct to the medical treatment of peptic ulcer.
TOLAZOLINE HYDROCHLORIDE—BOOTS— —25 mg. Tablets, Bottles of 100 or 250. 1 ml. ampoules (10 mg.) Box of 6 (Other strengths available).	2-Benzylaminazoline hydrochloride, a sympatholytic and adrenolytic agent with powerful vasodilator properties.	Raynaud's disease, chilblains, intermittent claudication, Buerger's disease, peripheral vascular disease associated with diabetes, acute arterial occlusion, arteriosclerosis, thrombophlebitis, varicose ulcers, bedsores, frostbite, gangrene, causalgia, relief of pain in acute anterior poliomyelitis, ophthalmic conditions in which active hyperaemia is required.

Descriptive literature on these and other medical products
is available from the medical department.

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